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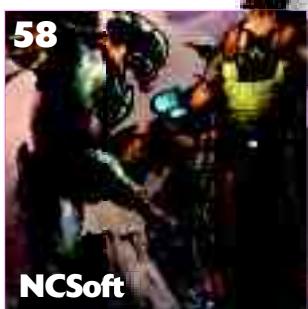
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Hack your home

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month's coverdisc**Brrr!**Alpine thrills 'n' spills await
with this winter wonderland
of slippery sporting action

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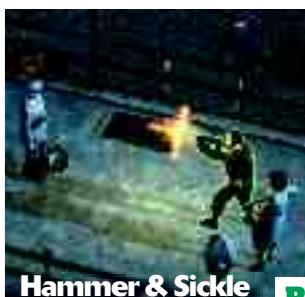
Toca Race Driver 3*

Fibreglass crunchin' fun



DVD ONLY?
Games and apps
marked
with an *
are also on the
CD editions

A



Hammer & Sickle B



Cold War C



Agatha Christie D



S.W.I.N.E

Germanic piggies fight French wabbits

E

On your disc you'll find the best apps, demos and tutorials

The best full programs

Our discs deliver top-quality, high-value apps and utilities. Let us know if there's something you want and we'll do our best to get it for you.

Play the latest games

Don't wait hours to download this month's best games demos. They're all here, right now.

Who needs manuals?

We want you to get the most from your free programs. PCFormat features more software guides than any other PC magazine in the world.

Technical support

We like to think our discs are always problem free, but if you do have any issues, contact the disc support team on 01225 822 743 or via email at: support@futurenet.co.uk.

Coverdisc contents

PLAY THIS

A TOCA Race Driver 3*

Strap yourself in and prepare for this turbo charged thrill-ride.

L/R Cursor Keys Steering
Up Accelerate
Down Brake
Space Handbrake
C Change view

B Hammer & Sickle

Russian spies and Nazi-looking Yanks abound in this WW2 RPG.

LMB Action
RMB Manipulate Camera
MSWheel Zoom
+/- Keys Add/Remove Layer

C Cold War

On your own behind enemy lines as an American journalist. A mirror to our lives...

W,S,A,D Movement
LBM Shoot
RMB Use
Shift Crouch
CTRL Sprint

D Agatha Christie

Can the undisputed queen of the whodunnit resurrect the adventure game?

LMB Action
RMB Inventory
J Journal

E S.W.I.N.E

A totally free and utterly brilliant RTS, pitting pig against rabbit. A thing of beauty.

LMB Select
RMB Action
Ins/PgUp Zoom
Del/PgDown Rotate Camera
X Special Unit Function

Loads more games content

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» Marine Park Empire » PSI: Syberian Conflict
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» Takeda 2 » TOCA Race Driver 3 » Space Hack

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» BF1942: Battlefield 40k

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» Destiny » HL2: DayHard
» HL2: Dodgeball » Q4: Quakemaps Map Pack
» Quake IV Software Developers' Kit
» UT2004: Carball
» Dawn of War: Tyranid Mod

» 50 Shareware games

GAME EXTRAS

For a full list of everything on the disc please refer to the disc's interface and packaging. Controls for the games are listed there too.



PCFormat

Welcome

There was a whole host of fun and interesting stuff at the CES show this year. This month's big news, though, is that the Google juggernaut has finally turned away from the business of helping you find things that other people are doing and selling, to the business of soliciting your cash personally. With Google Video – its direct download TV and movie service – Google has ceased to be just the most important internet company in the world, and

issued a challenge to global media magnates everywhere.

Opinion about Google is split – is it still the friendly, progressive company founded on the principle of quality software at no or low cost, or has its size, turned it into a corporate bad guy, with exceptional access to data and no fear of regulation?

Whatever your opinion, one thing about Google is clear – it achieved its unprecedented success by making its apps and services

better and easier to use than anyone else's, without ripping the end user off. That's a business lesson that everyone can learn from – from the music industry to the mighty Microsoft itself.

Enjoy the issue.



Adam Oxford, Editor



**Alec Meer,
Deputy Editor**



How to turn a penchant for destruction into something useful? Amateur breaker-of-things Alec discovered that carving bally great holes into expensive objects is an ideal way to relieve deadline-related tension and create unique PCs, such as the coffee table system in our Hack Your Home feature on p40. Next month: building an MP3 player into a vintage Transformer. Alec likes to call it 'tough love'.

Achievement of the month Attacking a traditional piñata with a less-than-traditional samurai sword in order to access its sugary innards.



**Al Bickham,
Technical Editor**



This month, tireless gadget junkie Al braved the silicone enhanced horrors of Las Vegas to bring us news from CES, the biggest annual consumer electronics show on the planet. You can read about his finding on pages 12 to 15. He also spent an unreasonable amount of time watching *Futurama* on the Zen Vision M (p.77) – until he met with a little accident...

Achievement of the month Dropping said Zen Vision M onto a floor, shattering the LCD screen, the greasy fingered primate.



**James Carey,
Games Editor**

There's no disguising a quiet month in gameland, but the lull before the summer storms can be just as exciting in its own way. There's an in-depth look at a unique brace of MMOs from NCSoft on page 58 as well as all

the latest gaming news. Prepare to be dazzled by TOCA Race Driver 3's speed on page 94, but don't miss the underdog racer *rFactor* too, it's a hardcore driving dream.

Achievement of the month

Winning real English pounds for playing a round of *Half-Life 2* deathmatch.



**Jeremy Laird,
Technology Writer**

After the pleasures of another non creed-specific holiday period, is it back to the banality of benchmarking? Yup. But 2006 is already shaping up to be a killer year for new and exciting kit. This month sees the launch of Intel's new Core Duo mobile processor on page 66. It's the world's first

dual-core notebook chip and it really does deliver outrageous mobile multi-thread performance. It's also a tantalising glimpse of what Intel has lined up for its desktop and laptop chipsets for the rest of the year.

Achievement of the month Toasting a \$1,000 CPU. Don't ask.





NEXT MONTH

THE OTHER SIDE OF PC SECURITY

Insiders and experts dish the real dirt

PCFormat

See page 161 for more details

ON SALE 23-02-06

PCFormat

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AROUND THE WORLD WITH PCFORMAT

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Frontend

THE BEST OF THE MONTH IN COMPUTING

Biggest year for tech ever

Wireless televisions, four terabyte microdrives, final Vista, legal movie downloads and more revealed

Granted, February may seem a little late in the day to be harking on about what a great year for technology 2006 is going to be. But put it this way: if we had a time machine we could have stepped into after the end of mid-January's Consumer Electronics Show (CES), we would have brought you these words back in 2005.

With the explosion of interest in personal technology wrought by the iPod, more eyes were turned upon the slew of new gadgetry unveiled in Las Vegas this time around than ever before. And rightly so – there was some truly knee-weakening kit on display (see overleaf). But somewhat surprisingly, it wasn't a high-profile hardware giant like Apple or Intel that dominated proceedings this time around, but rather the increasingly terrifying Google, announcing a couple of new ways it was going to eat the internet whole. Rumour had initially had it that the search monster was going to release a \$200 PC loaded with some sort of Google

operating system, but this proved to be the highest order of bunkum. Google's plans are clearly far bigger than that, as proved by the announcement of Google Movies. Based initially on a partnership with CBC, Google now offers TV and movie downloads for \$1.99 a pop, though prices and availability will no doubt differ for us when the legal complications for international sales have

Eight of the best

While the A8N32-SLI mobo sadly doesn't include the spiffing new onboard Soundblaster Live! audio chip, the 7.1 Realtek integrated sound means these Creative Inspire P7800 speakers do their job rather well. But for cable-free sound, check out p.84...



"It wasn't a high-profile hardware giant like Apple that dominated CES – it was Google"

Faster than a...

Make the best of the ultra-image quality those two GTXs will offer with this pin-sharp 19" Viewsonic VX924. At a whoppingly low 3ms response time, you won't believe in ghosts (well, ghosting) any more...

Blue velvet

The Cyberpower isn't brains without beauty. The distinctive NZXT case gives it a unique look, augmented with a Coolermaster liquid cooling system to keep those two cores and cards from running hot, then tricked out with blue cold cathode lighting.

It's only just begun...

2006 is off to a heck of a start, thanks to the oodles of tech-goodies unveiled at the Consumer Electronics Show, held in Vegas baby, Vegas. Al 'keep those showgirls off me' Bickham was out there for PCF, and will be revealing more amazing gadgets in next month's Geared Up.

Eye Candy

Two of everything

Cyberpower FX60 Custom

Until quad-SLI systems are released, this right here is as hot as a gaming PC gets. Check out the specs below this and let the drool runneth freely – yes, that's the brand-spanking-new dual core Athlon 64 FX-60, twinned with two 512MB GeForce 7800GTXs.

UNDER THE HOOD

CPU AMD Athlon 64 FX60 (dual core)
RAM 1,024Mb Corsair Twinxp 3200 XL
Video 2 x PCI-E 512Mb NVIDIA 7800GTX in SLI (pre-overclocked)
Hard drive 2 x 74GB Western Digital 10,000RPM Raptor, 1 x 400GB Seagate
Motherboard ASUS A8N32-SLI Deluxe (two 16 x PCI-E slots for SLI)
Case NZXT LEXA Tower
Optical drive Sony 16X DW-Q30A dual layer and Sony 16X DVD-ROM

top stories

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NET HEROES

The best and worst of the web

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WIRELESS USB

Here come cable free peripherals

p19

MOVIES TO GO

Sky Movies goes downloadable

**Alec Meer****A DEVICE FOR EVERY POCKET**

Less 'hybrid', more 'mutant', if you will...

I'm really not taken with these I-Mate JAM/Orange M500 or whatever reseller that PDA-phone hybrid thing happens to wear. Now, I'm not a luddite, resistant to the myriad joys of convergence or doggedly clinging to a solid plastic button instead of a touchscreen. The concept's fine, and truly, the Jam/M500 is a fine device – as a PDA. As a phone, it sucks. It sucks more than that old lady who won the 2005 World Egg-Sucking Cup. It's too big to fit in all but the baggiest pocket, it carelessly mingles friends' mobile phone numbers in with a thousand email addresses from work contacts unless you re-categorise everything, and it takes two hands to successfully enter a phone number.

Of course, it's a sign of the times, and phone-PDA incest is the way technology will progress. But every function is too fiddly for any to be a success. Blame for this must be laid upon Windows CE-Mobile-Pocket-Portable-Mini-Whatever, which remains an awkward thing indeed. What we need is for someone to come along and do for PDA-phones what Apple did for the humble MP3 player...

been ironed out. But we reckon a quid a pop for an episode of *Star Trek* sounds bearable, even if Google will inject its own form of DRM into content.

PLANET GOOGLE

Then there's Google Pack, set to be a major thorn in Microsoft's side. It's a free one click download-and-install software package comprising Google Earth, Picasa (Google's own image-

browsing app), Mozilla Firefox, Ad-Aware Personal, Norton AntiVirus and Adobe Reader. As well as potentially raising the profile – and uptake – of Firefox, the free download suggests Norton owner Symantec is not going to let Windows OneCare, Microsoft's recent anti-virus app, take down it and other third party AV firms without a fight.

The biggest news expected from CES was the

PlayStation 3, which was conspicuous by its absence. Rumours pegged this as being down to anything from the console and its ambitious Cell processor being little more than vapourware to it being content to sit back and watch Microsoft's Xbox 360 balls-up with a poor games line-up and hardware problems, so it can arrive in a blaze of glory later in the day. It was a big show for

next-gen television, though, with the likes of a a wireless-enabled TV, a VoIP-capable monitor and Sony's Location Free Portable Broadband Television, a 12.1" wireless touchscreen designed for TVIP viewing from anywhere with a net connection. We'll be revealing more of Our Man In Vegas' hot picks from the show floor next month, but let's kick off with our top six CES 2006 tech now... **PCF**

Viiva Las Vegas!

The six biggest and best bits of CES 2006



ATOMCHIP QUANTUM DISK

This may turn out to be a giant hoax, but Lordy, we certainly hope not. Essentially, it's a CompactFlash-sized card that houses up to 4TB of data. That's four terabytes, with a data transfers of 4Gb/s. Want a super-light laptop containing one? Just \$17,500. www.atomchip.com



INTEL VIIV

Intel's new PC standard (presented by Tom Hanks, Danny DeVito and Morgan Freeman) was supported by a number of big-name content providers. ClickStar will make an upcoming Freeman movie available for online purchase as it reaches cinemas. www.viiv.com



DUALCOR CPC

Is it a PDA? Is it a desktop PC? Actually it's both. The cPC is a touch-screen, PSP-sized unit with Windows XP Tablet PC Edition and MS Office pre-installed, with a 40GB HD and 1GB of RAM. Plug it into your peripherals, and it becomes a desktop PC. www.dualcor.com



DELL XPS 600 RENEGADE

What's better than two graphics cards? Four. Dell's latest gaming brute sports quad 7800 GTXs in SLI, with the edge only slightly taken off such wonder by the machine's horrific name and paint job. Bad news? It'll cost between \$8,000 and \$10,000. Good news? Quad SLI isn't a Dell exclusive. www.dell.com



WINDOWS VISTA

Bill Gates and Justin Timberlake (honest) unveiled the Win XP sequel's near-final interface, sporting a bigger, circular Start button, a resurrected sidebar, real-time thumbnail previews of running applications and a heavy emphasis on legal music and movie downloads, no doubt as a riposte to Apple's iTunes. www.vista.com



HD-DVD

The Blu-ray/HD-DVD format war was fought somewhat publicly, with both the Sony (BD) and Toshiba (HD-DVD) camps discrediting the other rather loudly. However, Toshiba will be first out of the gate, with a HD-DVD drive-equipped Qosmio laptop, complete with 1080p HDMI output for that big TV link-up. www.toshiba.co.uk

THEY SAY

"I guess if you have a demo glitch, it pays to have Tom Cruise next." Yahoo! CEO Terry Semel avoids embarrassment at his CES keynote by wheeling on The Cruiser.



TIME STARVED

Quick ways to entertain yourself

1 COPY PROTECT CDS

Obviously you want people to hear the difficult concept album you and your band have produced, but not without them stumping up your arbitrary £5 fee. Here's how it's done.

www.freedom-to-tinker.com/?p=946

2 ELECTRONICA

The history of dance music, with a selection of clips for each genre. Impressive. www.di.fm/edmguide/edmguide.html4

3 DIALECTABLE

A site that converts other websites into a different dialect. We quite like reading the BBC's decidedly po-faced news site site in jive talk... sucka. rinkworks.com/dialect

4 FOOSBALL LEGENDS

PCF likes to keep you updated on robots' creeping domination of human kind. This is the latest development. www.uberreview.com/2005/12/star-kick-one-man-foosball-table.htm

5 DERELICT LONDON

Despite the decrepitude, some of London is strangely beautiful. For those who prefer their dereliction with a dash of Americana, Lost America is a must. www.derelictlondon.com www.lostamerica.com



One Love

Microsoft finally releases its anti-virus app, *OneCare*, and begins rebranding its MSN services. Is this the end of Hotmail?

We're amazed we've managed to get away with it this long, really. With Microsoft busy sticking a taloned finger into the pies of gaming and home entertainment, traditional corners of the PC market had been left alone. Now, with Vista on the way, it's catch-up time. An early version of Windows *OneCare*, its Symantec, McAfee and AVG-terrifying anti-virus app has been released, with 30 day trials doubtless appearing on a box-fresh PC near you soon. Once *OneCare* goes live, it'll charge an annual subscription.

First thoughts? It's a very clean, elegant application that feels far more integrated into the Windows environment than its virus-fighting peers, which will certainly make it tempting to PC novices who are comforted by the Microsoft branding.

Inevitably, it's lacking some of the advanced features of other apps, but it does get all over Windows, replacing Service Pack 2's firewall with a rather more alert one of its own, as well as Norton Systemworks-esque tools like quicker defragmentation and junk file location. It won't be to

the taste of anyone who likes a large degree of control over their PC's security, but its ease of use will make it a no-brainer for some. It seems to be part of a larger rebranding of disparate Microsoft services with the Windows name, such as Windows Live Mail, a sleek Gmail-esque web app replacing Hotmail for anyone signed up to the beta. Similarly, MSN Messenger is to be replaced with Windows Live Messenger – the biggest change of which is the introduction of Microsoft's VoIP service, More news on that next issue...

Linux landlord

A distro-powered beer fridge that keeps track of your binge drinking? Whatever next?

That you can have fridges simply for your own barrel of beer at home is great, but the fact that someone has successfully hacked one and hooked it up to a PC running Linux is utter genius. Or madness, if you think about it. Anyway, Mike Wakerly built his Kegbot during a period of

unemployment, which is a much better way to utilise the free time than watching daytime television.

The Kegbot has a microcontroller that directs the valve and flow meter on the normal keg fridge and allows the user to designate digital IDs to restrict overuse. To get a drink you have to sign in

with your unique ID, so that the fridge can tell who's been drinking, how much they've put away, and if you set a limit, cut them off if they've had too much. Ingeniously, the fridge can inform you when it's time to buy more beer by sending you a text message. Brilliant.



DUMB PROBLEM OF THE MONTH

Q I've spilt apple juice on my laptop, what can I do?

A If you've spilt the liquid (whether apple juice or anything else) right across the keyboard, it's time for some immediate action. Power off the laptop straight away, don't worry about shutdown procedure; Windows is a lot more likely to run improperly (or not at all) with fried hardware than from a missed shutdown procedure. Open the laptop out and turn it upside down to allow as much liquid to run out as possible. Disconnect the power cable and battery to ensure there is no electricity running through the system. With the laptop open and upside down, place it in a warm part of your house, such as an airing cupboard, to dry. Leave it for 48 hours just to be sure, then tentatively switch it all back on. Sticky, sugary drinks such as apple juice could cause a myriad of conceivable problems, but hopefully the worst you'll suffer is a few gummy keys.

The hellish and the heavenly

The real saints and sinners of the internet revealed

Honestly, it can only be a matter of time until PCFormat becomes the Heat magazine of the PC world, as evinced by the fact that we found ourselves cackling over this little nugget of information. The Internet Service Providers Association recently released its annual internet 'heroes and villains' list, casting the spotlight on companies or individuals that have had an impact on the internet – for good or ill. And who doesn't love a good bitch-off?

Top of the villains list was, of course, Sony, for its rootkit scandal. This came to light in October when security agency Websense found

that certain insalubrious sites were designed to attack users' PCs by exploiting the technology, which comes with some Sony CDs.

Sharing the sub-limelight on the villains front was Russia. While nominating a country may smell like overkill, the fact is that Russia's net industry has failed to fight the high levels of cyber crime that originates from the great bear's hindquarters. Also nominated was Commissioner Reding, whose proposed revision of the TV Without Frontiers directive threatens to extend broadcast regulations to the web.

Hero nominations go to the All Party Internet group, who have



For every good soul on the web there seem to be 20 craggy hellbeasts.

maintained a persistent and determined campaign to renew and review the UK's Computer Misuse act. The APIG rubs shoulders with Roger Darlington, the outgoing chairman of the Internet Watch Foundation, whose peerless fight against obscenity, racism and rights abuse on the internet is worth a round of applause in anyone's book. Unsurprisingly watchdog outfit Ofcom gets two nominations, and a surprise entry for the Independent Office of Telecommunications Adjudicator, who have lent much needed assistance to ISPs with the complicated process of local loop unbundling. www.ispa.org.uk

Bikini shoot-out

Head the one about the remote-controlled deer hunt, where you take control of a real firearm via a web interface and shoot at real animals?

Earlier this year Texas banned the 'sport' for "Not reflecting the true nature of hunting" and also to prevent Jonny Tweenager from gaining control

of live weaponry. Well John Lockwood's Live-Shot.com website, one of the homes of this very Texan craze, has responded by launching Live-Paintball.com. Gone are the bullets, replaced by paintballs. But what of the live deer? Well they've been replaced by live bikini-clad girls... What else? God bless America!



That don't look like any deer I seen.

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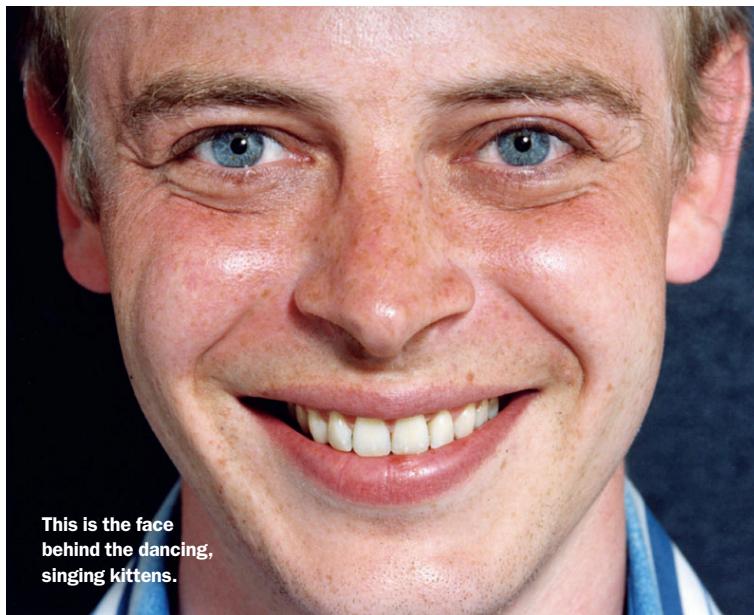
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This is the face behind the dancing, singing kittens.

Joel-y good



www.rathergood.com
Home of Joel's animations. Some featuring his band, Seven Seconds of Love.



www.b3ta.com
The place where the less-travelled weirdy parts of the web become uncovered.

A b3tter place to be

We track down cult web animator Joel Veitch, creator of rathergood.com, and quiz him to bits...

PCF Your unique brand of web animation has become somewhat iconic... how did you get started?

Joel There was never any master plan. I started off rathergood.com because I thought it would be a laugh, basically. I taught myself *Flash* and *Photoshop* basics in the evenings after work, then went off to do an MA in Electronic Media at Oxford Brookes, which gave me a year to work on things without any pressure on me to make a living. After I finished that, I just kind of kept making things and it went from there.

PCF What sort of things inspire you to create your animations?

Joel Kittens! Hooray for kittens! And rock! And booze!

PCF Which software packages do you use?

Joel Well, the main ones are *Adobe Photoshop* and *Macromedia Flash*. That's the core for my animation. I also fiddle about on lots of things like *After Effects*, *Premiere*, *Reason*, *Acid*, and so on for various different things.

PCF We all love the web... Do you think what you do would be possible without the amazing level of accessibility it offers?

Joel The web is absolutely revolutionary in this respect. It's possible to get a huge audience with a budget of practically zero these days

thanks to the way the net works. It's a huge democratisation of creativity. The really beautiful thing is the way it's completely dependent on people sending each other links to things they think are cool. This means that no matter how much money a big corporation throws at an idea, if it's simply not funny then people won't send it round, and it won't go viral. However, a teenage kid in Grimsby can knock something out for nothing in an afternoon and gain a global audience.

PCF Is there any internet stuff (software, technology, innovations) that you look forward to?

Joel The thing which I'm most looking forward to is having the bandwidth to effectively deliver video, I think. At the moment doing motion with *flash* animation is the best way because it is so effective to deliver, but it restricts your creative options. You can do a lot more with video delivery (more

complex animation as well as actual filmed stuff) but either you have to compress it brutally so it looks awful, or live with a file size that will reduce the number of people who see it.

PCF Who would win in a fight between you and Rob Manuel [creator of b3ta.com]?

Joel I'd like to think it would be me as I am a bit more active, but then Rob is substantially bigger than I am. He also has far, far more hair, which I deeply suspect may have a Samson-like effect. The clincher is likely to be Angus, his young son, who has apparently developed the ability to vomit Mango acid into people's eyes. I fear he would intervene in this manner to defend his father, and scupper my attack, along with my vision.

PCF Any last messages for our readers?

Joel Thank God for happy kittens!

HOT

Dual-core laptops
Hopefully not hot in the 'burn a hole through your thighs' way, but hot in the 'supremely powerful desktop replacement' way. We like top quality gaming on the move and perhaps this is the answer.

Gamers

Apparently gamers (most of us then) are better at multitasking. This means that we are more able to drive and talk on a mobile phone at the same time, according to Oregon State University. We wouldn't recommend it though.

Wolfenstein

Back in fashion, as id has a new game in the works.

The usual suspects

The Music Publishers' Association are demanding the closure of lyrics sites now, and want to hand out jail time. How the distribution of lyrics affects sales, we're not quite sure, but perhaps we'll start seeing CD inlays for sale on eBay.

Intelligent worms

AOL instant messenger was recently hit by a worm which reassured its targets, via instant message, that it wasn't a virus. The concept of being coerced into installing malicious software by the virus itself gives us the willies.

Wolfenstein

A Wolfenstein 3D movie could be in the works.

NOT

HEARD THIS? "PlayStation 3 is the only format that has 1080-progressive, which is the true definition of HD, so it's really premature to be talking about the HD era." Perhaps Sony exec Phil Harrison might like to visit PCF's office and look at our 1080p-happy kit?

Students vs RIAA

Princeton pupils fundraising for \$5,000 fines

Delwin Olivan, an 18-year-old student at Princeton, has been issued with a subpoena for distributing copyrighted material, and a bill for \$5,000. His fellow students have put him at the centre of a campaign to raise funds and awareness to what they see as the 'bloodsucking predators' of corporate America. A website, freedelwin.org, has

been established to inform people of Olivan's plight, and enable them to download flyers and posters to distribute, as well as buy t-shirts emblazoned with the 'Free Delwin' logo. You can also log onto the website and make a donation if you feel particularly strongly about the case.

Olivan was issued with a forbidding 109-page document listing all the

4,070 illegal files that had been found on his computer, and the case details stated that he had caused what the RIAA claimed amounted to "irreparable injury that cannot be compensated or measured in money".

We're more than a little sceptical of this claim, since the RIAA managed to bill Mr Olivan pretty quickly. The case continues.



Students – always complaining about something, aren't they? Honestly, a little bit of jail time never hurt anybody.

Con-sole

During the Christmas period, an eBay seller thought he had bagged one of the rare Xbox 360 Premium Packs. Unfortunately, there was a rather nasty twist in the tale, in the shape of this inconspicuous sentence towards the end of a huge recycled advertising spiel, "This auction is not for an Xbox 360, but instead a picture of one".

After the 15 bids for the console – the final price settled at £470. Many people would baulk at that price for the console itself, but it's hard to imagine the reaction when a small picture of Microsoft's latest console plopped through this unfortunate victim's letterbox. The seller of the item is no longer registered on eBay, suggesting that either the auction giant itself got involved, or they ran with the cash. Either way, the moral of the story is be extremely careful on auction sites, and ensure you read the entire item description carefully before you bid.

Wireless USB is here(ish)

The possibility of 'find the hidden printer' games has increased dramatically



An end to the wire-strewn office? We certainly hope so.

Here's a thought: imagine uploading an album to your MP3 player that's sat in a shoebox in the cellar, or a message to your phone saying "Ol! Come back!" just as the burglar stealing it escapes out of the door. The possibilities are truly endless. And finally, it shall come to pass. The good news is that it's capable of full 480Mbs USB 2.0 speeds. The bad news? It still involves a hub. You have to plug a dongle into your PC, which wirelessly attaches to the hub in another room (up to 30 feet

away), into which your MP3 player, printer, external hard drive or whatever is plugged in. As far as the PC and the device are concerned, you then have a standard USB connection betwixt the two. It's certainly a step forward, if a slightly inelegant one, but you can bank on MP3 players, scanners and the like shipping with integrated WUSB together with greater facility to direct data transfers from their end rather than just the PCs.

Israeli firm Wisair (say it carefully) has, with the help of Intel,

come up with a cheap-to-build hub 'n'dongle reference design which should be available to manufacturers as early as the Summer. There are a few bugs to iron out before official certification can be awarded and production models can be produced, though. Notably, the ultra wideband frequency the technology uses must not clash with the ever-increasing array of other radio frequencies already in use. Next year's hot Christmas present, then: the wireless iPod? Here's hoping, eh?

Parental panic

Clearly PCFormat isn't the only organisation tired of hearing scaremongering over the content of videogames. ELSPA has teamed up with Lord Puttnam to launch a website for parents of videogame-obsessed kids at www.askaboutgames.com.

The site has attracted PCF's attention not because of its obligatory

anti-piracy message and a bit of Britsoft jingoism, but because it seems rather honest and truthful. You don't read phrases like "there has not been one proven case of videogames causing violent behaviour" very often.

So if any kids you know are feeling persecuted over their playing habit, point them at www.elspa.com

49%
STAT!

The percentage of US HDTV owners that aren't watching HDTV broadcasts. 28% of them didn't buy extra decoding equipment because they felt the picture was already improved enough.



Free full image of an Xbox 360. Worth £470.



From BSkyB to Sky BB

Murdoch's media empire announces plans to grab the lion's share of the lucrative TV-on-demand market

Sky is now the UK's biggest player in IPTV with the launch of Sky by Broadband, a service that is free to existing Sky TV subscribers and allows them to download and play movies, sports and other Sky programming on their PCs via their broadband connection. The service is available on any ISP and although it's limited to connection speeds of 1Mb or above, a Sky spokesperson assured us that your connection speed "will not affect the picture quality." As this suggests, we're not talking HD just yet. Sky's HD plans are staying firmly in the satellite delivery model for now, but as you can see from

these shots, a full-length feature film like *Alien: The Director's Cut* comes in at a mere 431MB thanks to QVBR encoding. This draws very clear parallels with the downloads offered by the BBC's IMP TV-over-broadband service, which while being fantastic does produce poorer picture quality than your average DivX-encoded DVD rip. Sky's 25 FPS and 96bit two-channel stereo sound were just fine on a full-size cinema screen at the launch event though.

At the moment Sky Movies and Sky Sports channels are available offering hundreds classic movies, current Hollywood blockbusters and sporting events with Sky One

coming later in the year. The service is freely available to existing Sky TV users with two or more Premium Sky channels, requiring no extra hardware and only a small client downloaded to your PC. The content is DRM'd to the eyeballs of course so you won't be able to transfer the files to other devices (or even have the client on two different PCs) and because of the way Sky licenses movies, there are no plans to roll out the service for non-dish owners. While this limits the service to Sky TV subscribers, it does allow Sky to get ahead of the digi-distribution game with all the latest films. More on this next issue.

Inside goes outside



After what was arguably the most successful marketing campaign of the '90s, Intel is dropping its 'Intel Inside' logo and associated jingle. Replacing it is the new 'Leap Ahead' ad campaign. According to its website this is 'an idea, a mantra, a call to action' and is designed to support its move from merely powering standard desktop PCs into a manufacturer of all things digital.

Intel is hoping that it can recreate the stranglehold it exerted over the processor market and make its chips the centre of whatever shiny new digital device you are thinking of purchasing. Interestingly, AMD announced shortly afterwards that it intends to be known as 'AMD Live!', which seems to be a riposte to Intel's home entertainment streaming standard, ViiV.



Looks can kill (your PC)

Malware hidden in image files could cripple any Windows operating system

While everyone was putting their feet up over the New Year period, hackers dug up one of the most serious Windows security vulnerabilities yet. This new hole in its defences allows hackers to put malicious code into innocent-looking image files. The worrying thing is that you don't have to download the image for it to contaminate your system, as this new flaw can be triggered simply by

viewing a web page or email with an infected picture. Worse still, all versions of Windows are at risk. A group of hackers responsible for some attacks have added to PC users' concerns by publishing the source code that they used to exploit this hole in Windows' defenses. Some antivirus companies are calling this the biggest vulnerability they've seen as it affects every version of the

operating system going back to 1990.

Microsoft took two weeks to release a patch to counteract the problem. In the meantime the company recommended that users should take care not to visit unfamiliar websites. This is the web equivalent of shouting "Stay in your homes!" through a megaphone. Fortunately, a thoughtful bedroom coder came up with an unofficial patch far sooner.



Someone's sent you this cute image of a giraffe, but be on your guard – simply looking at it could riddle your PC with viruses.

WHO IS...
Charles Cecil
MD, Revolution Software



He's not just another suit in the games world, is he?

Far from it, he started Revolution Software with a £10K loan from his mum in response to dodgy adventure games like the King's Quest series

So, he started some garage-based dev in the Dark Ages. Are we meant to be impressed?

You will be. The games that he is most well known for are the Broken Sword series. This year will see the launch of the fourth Broken Sword, Angel of Death. It is hoped that this title will breathe fresh life into the dying genre of the adventure game. The game will contain the gripping story and intelligent puzzles that made the rest of the series so good, as well as the conspiracy theories that made them so compelling. Because of this he is also due to be consultant on the forthcoming game license of The Da Vinci Code. He's also consulting with Philips over its ambient gaming hardware, apparently.



Because cleanliness is next to Godliness, or so we're told.

PCFtest BLOGGING SITES

What is it?



Blogger
www.blogger.com
 Google's successful foray into blogging trades on its simplicity and ease of use more than anything else.



LiveJournal
www.livejournal.com
 Home to millions of angsty teenagers who, to be fair, were at the front line when the blogging phenomenon erupted.



MSN Spaces
spaces.msn.com
 The beast from Redmond dips its toe in the blogging waters. Its lack of a search facility is proving increasingly popular.



Blogs.org
blogs.org
 This plays host to some of the ugliest blog templates we've ever seen and will do well to keep up with the bigger sites here.



Blogit.com
www.blogit.com
 Suggests that you can earn \$1,000 or more from your blog. Will that be enough to win it any fans in the PCF office?

Does the world need to hear about your inner turmoil and/or gaming grandma? If so, which is the best blog site to spread your philosophy on?

Pros

A nice set of templates mean your blog will look lovely. Adding posts and features is simple and you can even text or email entries in from afar.

Cons

Blogs tend to look similar. If you want to do more than just punch in occasional entries and add the odd picture, you may want to try another site.

Score

4/5

4/5

1/5

2/5

1/5

CONCLUSION

First of all, we'll discount Blogit.com and Blogs.org, as they simply don't have the reach and range of features that most bloggers look for. There wasn't much to choose between LiveJournal and Blogger, so we suggest you try out both services before settling on one or the other. If pushed, we would plump for Blogger, purely for the size of its user base and fuss-free interface.

Kazakbanned

Borat, Sacha Baron Cohen's satirical Kazak character, has been engulfed in a PR ruckus after his recent comments.

"Kazakhstan is as civilized as any other country in the world. Women

can now travel on inside of bus", he claimed. The Kazak government immediately pulled the plug on Borat's .kz website. "He can go and do whatever he wants at other domains," muttered Nurlan Isin, President of the

Association of Kazakh IT Companies. "I have no connection to Mr Cohen whatsoever, and I fully support my government's position to sue this Jew," announced the comedian, in character as Borat, about himself.

Win! Five complete PC cleaning kits

Despite the fact that we're sure that all your attempts to hack your home are as professional as ours (feel free to check out p40 for proof of our DIY skills), no matter what happens you'll still need to do a bit of tidying up afterwards. While Mr Sheen may well clean umpteen things clean, he doesn't really specialise in computers, so the search is on for something a little more sensitive. In order to help you tidy up your new and

improved desktop, and remove some of the 21,000 or so germs per square inch on your keyboard, we've teamed up with Cleaner Systems Ltd. We've got their excellent Complete Cleaning Kits, each worth £45, to give away to five readers.

Also, every single PCF reader is entitled to a 10% discount off the entire Cleaner Systems range. All you have to do is head to the company's no-doubt spotless website at www.cleaner-systems.co.uk, enter 'pcformat' in the discount code box and you're away. To win one of

the Complete Cleaning Kits log onto our website at www.pcformat.co.uk/competitions and answer the following bacteria-related question:

How many germs per square inch live on the average keyboard?

- a) 4,000
- b) 49
- c) 21,000

Terms and conditions are on the website.

Red-hot Quake IV patch released

Dual core owners, start your machines...

Good news for the lucky owners of dual core PCs. id Software has released a beta dual-core patch for Quake IV, and the results are spectacular. At lower resolutions, PCF found that the patch delivered performance gains between 60 and 70%. That's true for both AMD and Intel dual core CPUs, despite the fact that the patch is a joint effort between id and Intel. Even at 1,280x1,024 with anti-aliasing enabled, the patch enables a performance boost of around 30%.

id has not divulged any details on how these startling performance gains are being achieved. However, given the fact that neither AI nor physics calculations are executed when running time demos in Doom 3 engine games, we reckon that id has found a way to split the CPU load generated by the graphics rendering engine into multiple software threads.

Over the past 12 months, CPU performance limitations have become ever more apparent as powerful new graphics cards have appeared just as single core processor performance has

come to a near standstill. Both Intel and AMD have announced that they expect the vast majority of future CPU performance gains to come from adding processor cores rather than an improvement in single core performance. However, several prominent game developers, including Epic, have warned that creating multi-threaded game engines is a challenge that could take several years to crack. Here's hoping id's success in demonstrating a hugely effective multi-threaded patch for an existing game engine will encourage other developers to get to grips with multi-core PC platforms sooner rather than later.



id's impressive dual core processor system hard at work.

NEWS IN BRIEF

McMedia

Disney and McDonald's appear to be getting together to offer portable media players in Happy Meals. The players would come with a 'portion' of media, such as a level of a game or part of a film. On subsequent meal purchases the remaining parts of the content could be downloaded from the restaurant's wireless access point.

Transmission: impossible

A British company called Staellium is pioneering a new service to allow SMS messages that self-destruct after 40 seconds, something that would have saved a certain Mr Beckham a lot of trouble recently. We here at PCF think that this should become the standard for any texts sent after 11pm on a Friday night.

Cut-down keyboard

Designer John Parkinson is taking on the might of QWERTY with a new 53-key alphabetical keyboard that will apparently be easier for non-touch typists. Needless to say, we aren't hugely impressed by the New Standard Keyboard, not least because its

bright red, yellow, blue and green keys make it look like a garish child's toy.

Google leaps into bed with AOL

Google has purchased a 5% stake in AOL for \$1 billion, thus preventing Microsoft from making a similar deal. What this means for us users is that the popular AOL Instant Messenger program will now interface with Google's own IM and VoIP software, Google Talk. The two will also collaborate on an online video search facility.

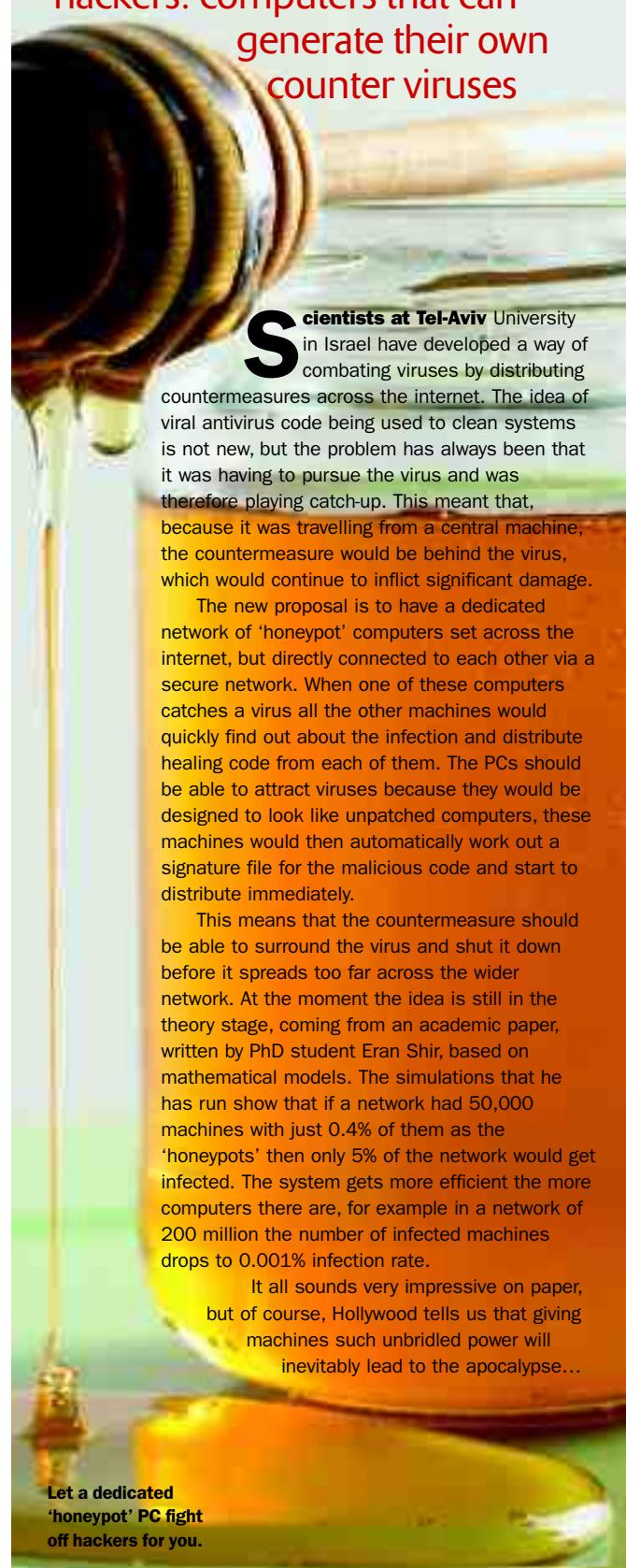
QUOTE!

"Words like 'ethics' seem to be missing from their codes of conduct."

The EC's Margot Wallstrom on Microsoft and Yahoo's approach to the Chinese governmental wishes.

Fight back

A new best defence against hackers: computers that can generate their own counter viruses



Scientists at Tel-Aviv University in Israel have developed a way of combating viruses by distributing countermeasures across the internet. The idea of viral antivirus code being used to clean systems is not new, but the problem has always been that it was having to pursue the virus and was therefore playing catch-up. This meant that, because it was travelling from a central machine, the countermeasure would be behind the virus, which would continue to inflict significant damage.

The new proposal is to have a dedicated network of 'honeypot' computers set across the internet, but directly connected to each other via a secure network. When one of these computers catches a virus all the other machines would quickly find out about the infection and distribute healing code from each of them. The PCs should be able to attract viruses because they would be designed to look like unpatched computers, these machines would then automatically work out a signature file for the malicious code and start to distribute immediately.

This means that the countermeasure should be able to surround the virus and shut it down before it spreads too far across the wider network. At the moment the idea is still in the theory stage, coming from an academic paper, written by PhD student Eran Shir, based on mathematical models. The simulations that he has run show that if a network had 50,000 machines with just 0.4% of them as the 'honeypots' then only 5% of the network would get infected. The system gets more efficient the more computers there are, for example in a network of 200 million the number of infected machines drops to 0.001% infection rate.

It all sounds very impressive on paper, but of course, Hollywood tells us that giving machines such unbridled power will inevitably lead to the apocalypse...



Jeremy Laird
SCREEN DREAMER

Wonderful widescreen for all. Dell's at it again
Great news fans. Dell is about to shake up the desktop display market once again. Not content with utterly humiliating every other monitor manufacturer with the simply awesome **2405FPW** 24-inch widescreen panel, the big blue beast is limbering up to launch another killer, to be known as the **3007FPW**. Those of you familiar with Dell's nomenclature will, of course, already have deduced the astonishing 30-inch screen diagonal this monster offers.

Granted, Apple already sells a 30-inch cinema display which boasts the same crazy 2,560x1,600 native res. But despite recent price cuts, that screen still goes for £1,800. The **3007FPW** will be yours for just £1,300. Now, bargainous though that may be compared to the Apple unit, it's still a damn site more money than most can spare. But here's the twist: this new mammoth will undoubtedly push prices of 20 and 24-inch widescreen monitors even lower. Currently, the **2405FPW** can be had for around £600. By the end of 2006 I reckon it'll be selling for around £400. Start saving now and you might just bag a bargain later this year.

Gearedup

THE HARDWARE ON OUR MOST WANTED LIST

Extreme clockspeeds



Asus Radeon X1800 XT Top

Price £465 Available Now [Web](http://www.asus.com)

Shortly before ATI went public with the new Radeon X1800 XT, the Canadian outfit's head honcho Dave Orton described the clockspeeds the new killer graphics chipset would reach as "unprecedented". So, when the real deal arrived and hummed a 625MHz tune, well, we plucked lint from our navels, buffed our nails and sorted out our sock drawers – anything to prove how non-plussed we were. Yes, the X1800 XT is the highest-clocking video chip ever. But it's only 15 per cent quicker than a boring old Radeon X850. And frankly, we don't get off bed for less than 700MHz. Which means we'll be forced to hit the coffee hard when this 700MHz core, 1.6GHz memory revision of the X1800 hits our desks courtesy of Asus.

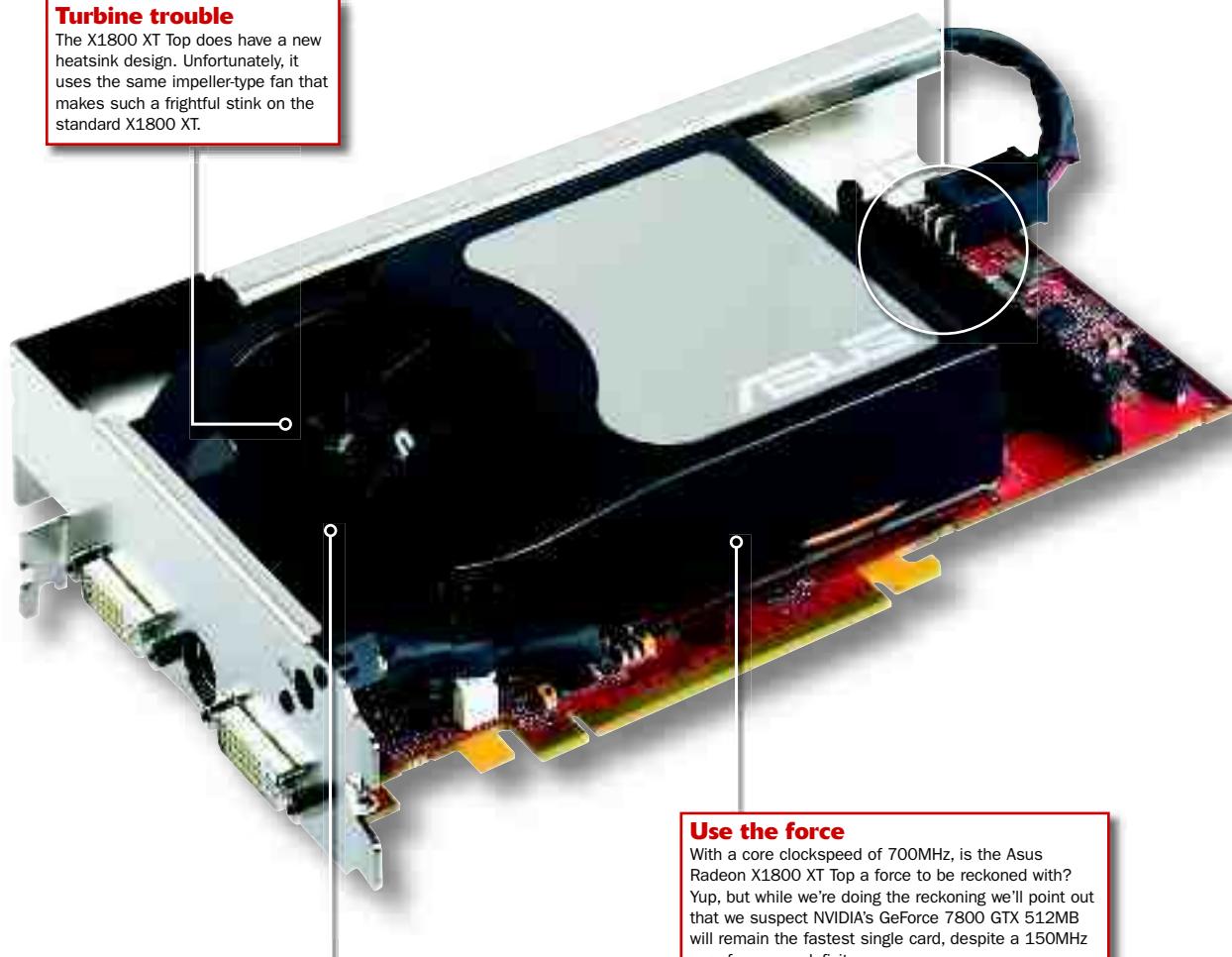
Top gear

Plug and play

A PCI Express graphics port may be capable of supplying fully 75 watts of power. But this über-clocked 90nm monster drinks so much juice Asus has decided to provide an external power brick to quench its thirst.

Turbine trouble

The X1800 XT does have a new heatsink design. Unfortunately, it uses the same impeller-type fan that makes such a frightful stink on the standard X1800 XT.



Use the force

With a core clockspeed of 700MHz, is the Asus Radeon X1800 XT Top a force to be reckoned with? Yup, but while we're doing the reckoning we'll point out that we suspect NVIDIA's GeForce 7800 GTX 512MB will remain the fastest single card, despite a 150MHz core frequency deficit.

Chip panned?

This is undoubtedly the quickest ATI card yet. But before you splash out the best part of £500, remember that ATI's highly anticipated R580 chip, AKA the Radeon X1900 is just around the corner.

Friendly power

→ FSP Green PS

Price £55 Available Now Web www.fsp-group.com.tw

Just how often do you give serious thought to the environmental impact of your PC and your usage of it? If you're anything like the tech whores here on PCF, the honest answer will be not nearly enough. So, here's a chance to do your (very) little bit to prevent total environmental meltdown. It's a green PSU, no less. The tree-friendly credentials include high efficiency for reduced wastage and lower power bills and full RoHS and WEEE compliance. For the uninitiated, that means this power supply supposedly contains no harmful substances and is built with reduced weight (and therefore reduced material usage) in mind. Oh, and for the record it's a 400 watt unit with SATA and PCI Express graphics connectors. **Lean, mean and green**



Desk jockey

← Ion iTTUSB Turntable

Price Around £70 Available February Web www.ion-audio.com

Another month, another slightly batty peripheral. But unlike the novelty-packed but dubiously useful likes of a USB mug warmer, the Ion turntable actually does something of value. OK, it's a plasticky looking lump that will have die-hard audiophiles vomiting copiously onto their £50,000 Contium Caliburn Direct Drives. But if you simply want to transfer some unwieldy old records into a more manageable digital format without selling a kidney to fund the process, this is probably as good as it's going to get. And best of all there's a high-speed USB recording feature which will minimize the tedium of transferring a large LP collection into MP3-tastic tunes.

Music to our ears

Silent killer

→ MGE XG Magnum 500

Price TBA Available February Web www.mgecompany.com.co.uk

One man's object of function is another's source of fetishistic fancy. But whatever floats your boat, this awesome power supply unit will definitely satisfy. It delivers many of our must have PSU features, including modular cable attachment and a 500 watt minimum power output and adds a whole raft of tasty extras. For starters, it's claimed to be silent thanks to a heat sink which pokes out of the back of the unit (and therefore outside of your PC case) and an all-alloy chassis. However, the funkiest feature is the LCD information display. Of course, we love LCD displays so much we'd be impressed if it only told the time. But in fact it displays both the total load in Watts and the unit's current operating temperature. Now that's handy. **Fanless fantasy**



Tiny, shiny box

← Evesham Mini

Price £499 Available Now Web www.evesham.com

For a measure of how far the PC has come in the last five years, look no further than the Evesham Mini. Granted, it's based on AOpen's familiar Pandora bare-bones system and is therefore a shameless rip off of Apple's delectable Mac Mini. But with Microsoft's Windows Media Centre Edition operating system, a Pentium processor and a DVD burner packed into a ridiculously small package, this is very capable multimedia system and surely the ultimate lifestyle PC for living rooms. At least until the HDTV revolution finally reaches the olde worlde. What's more, the £499 starting price is about the same a quality DVD player of five years ago, and just think of all the extra functionality your money buys today.

Small wonder



PREVIEW CASE NOTES

Format wars



Lexa Classic Series

Price £97 Available Now Web www.specialtech.co.uk

The modern PC is powerful. But despite the example set by Apple's peerless desktop computers, it usually isn't pretty. That's especially true with regard to the usual brittle plastic and pressed steel abortions that the big PC makers squeeze out in colossal numbers. Indeed, a fine-looking chassis is a rare thing amongst the cheese-infested enthusiast market for self build PC cases, too. The appearance of any reasonably classy new chassis, then, is a cause for a small knees up. So, what does the Lexa have to offer apart from sleek good looks? For starters, it's aluminium throughout, packed with enough fans to keep even Intel's piping-hot Prescott and Smithfield CPUs cucumber cool and boasts three temperature sensors to prove it. Of course, that's all par for the full-sized ATX tower course. What you won't often find elsewhere are the replaceable dust filters that prevent all that dead skin and hair from piling up on your precious components.

Catwalk case

Three alternatives...

Asus Vento

→ Price £97 Available Now Web www.asus.com

One for oily-skinned, frag-happy teens? Perhaps, but the Vento spans Alienware at its own game with lustrous paint quality and bucketloads of drama. The ultimate gamer's chassis.



AOpen EZ Nouveau

→ Price £133 Available Now Web www.aopen.nl

Classy and understated. Not words you'd associate with most do-it-yourself PC cases. And possibly praise this AOpen box doesn't quite deserve. But it's not far off. Comes complete with 400 Watt PSU.



Enermax CS-718

→ Price £100 Available Now Web www.enermax.co.uk

This is the daddy. Well over half a metre tall, nearly half a metre deep, enough bays for a server farm's worth of drives and a novel inverted motherboard mounting solution that aids cooling. One for genuine geeks.



ANALYSIS

PCS AND EURO TVS STILL DON'T SEE EYE TO EYE



Remember when you bagged your first video card with a TV-out port? Here's betting that one of the first things you did with your new mono-pixel-pipelined pride and joy was to hook it up to your parent's 25-inch CRT goldfish bowl and marvel at the console-crushing rendering power of your trusty PC. Of course, you will have happily ignored the tragic S-video image quality. After all, this was cutting edge stuff at the time. Thank goodness, in today's pure-digital age impeccable image quality is a given. Or is it?

The depressing truth is that while Americans in ever greater numbers are enjoying crystal clear PC signals on their digital HDTVs, ghastly S-video remains the default technology for connecting PCs to Euro-style standard definition sets. And that means two things: offensively bad image quality and no support proper for widescreen formats.

With that in mind, we welcomed the news that ATI was including RGB SCART connectivity with its Radeon X800 and X1800 All-in-Wonder multimedia graphics cards. Finally, we could

pump our widescreen tellys full of Microsoft's pretty Windows XP MCE interface with little loss of image fidelity. Or so we thought. In practice, the new AIW's SCART-out functionality is so badly executed, it beggars belief. For starters, there's no way of discovering with certainty which video format the new All-in-Wonder cards are outputting. That's a real killer, because

SCART is capable of carrying both S-video and RGB video signals. According to ATI, the new AIWs are clever enough to detect TVs capable of receiving RGB SCART and feed them appropriately. But we sure as hell haven't been able to pull it off. And nor have a number of others in the PC reviewing fraternity we've spoken with. If the UK's finest IT hacks can't pull it off, what hope for Joe "occasional PC enthusiast" Punter?



For a picture of this clarity, S-video input simply won't cut it.

Gameslatest

GAMING NEWS TO PUT A SPRING IN YOUR STEP



James Carey
MR LOVERMAN. SHABBA!

Give gaming some love on Valentine's Day.

Ha! Caught you out didn't it? Oh yes my friends, you'd better nip down the 24-hour garage and grab a bunch of posies before the other half realises you've forgotten. Not that I can blame you being absent minded, it's hard to concentrate on matters of love when there are games to play. A man can only do so much, right?

This month you could say I've had my first experience of professional gaming (ie. earned money by playing a game). Before you say 'Oi Carey, isn't that what you do for a living?' and I say 'Ah no, see, they pay me for the words, not the frags, innit.' I mean I actually made four whole pounds just from playing a single HL2DM game. And it felt good. I think this Prizefight thing (see p101) is a great idea and I usually hate gambling.

Money is the root of all people as they say, and money is bad. But it does seem that gamers are increasingly being seen as a market within their own virtual worlds regardless. In-game billboard advertising, cash-for-seces in Roma Victor, four whole pounds for fragging strangers, where will it all end?

Splinter Cell Double Agent

Undercover of darkness



The multi-path storyline should add replay value.

DUE DATE Spring
PUBLISHER Ubisoft
DEVELOPER In-house
WEB www.splintercell.com

With a convoluted plot of filmic proportions, Sam Fisher's half-Bourne, half-Bond blend of espionage and assassination will make *Double Agent* a feast for the spy-starved this spring.

Fisher's daughter has been killed in a car accident

"The decisions you make will have an effect on the rest of the game"

and poor old Sam is having a hard time dealing with it. Begging to be sent on a mission to take his mind off things, our hero becomes the star of a staged robbery and murder spree across the states as a cover story to earn him some jail-time alongside the leader of a criminal organisation, Jamie Washington. This, as they say, is where the plot thickens. Sam, in your hands, will have to baby-sit Jamie during the inevitable

escape from Ellsworth prison, befriend him and infiltrate the 'John Brown's Army' gang he leads.

Once embedded in the organisation this latest *Splinter Cell* plays its trump card, namely a branching mission tree. As the plot twists things turn very *Donnie Brasco* with Sam receiving conflicting orders from his NSA employers

and the JBA. The decisions you make will have an effect for the rest of the game, ultimately leading to multiple endings. The franchise is also building on its solid multiplayer reputation, promising more online innovations, though what form they'll take is still under wraps.

As well as doing his bit of bird, Fisher will be travelling from Middle Eastern war zones to arctic peaks, even partaking in a spot of skydiving.

Well it's a bit like...

SCDA producer Arnaud Carrette sums up Sam's adventure

"The game makes me think of *Ocean's Eleven* for the perfect escape plan, *Urban Climbers* (free-runners) for the fast, spectacular way of moving, *Alien* for silent chases in the dark with only one or two torches and breathtaking emotions." The different platforms are being handled by different Ubi teams across the globe so hopefully we should get more than a simple console port. If Arnaud's vision for the MP modes he's in charge of live up to his inspirations, we're in for a real treat.

GOSSIP!

"If you can be the first to reproduce this in our office, we will award you \$1,000 and cover your trip." Moscow based StarForce respond to reports of its software borking CD rewriters.



Evidently Sam's white parachute was in the wash that day.

MORE SCREENS!
Preview shots of the latest games are on the disc



Ladies rejoice, Lara has imperfections!

Tomb Raider Legend

Lara gets face-fuzz (no really...)

DUE DATE Summer PUBLISHER Eidos DEVELOPER Crystal Dynamics WEB www.tomraider.com

Why do graphics card manufacturers include monsters in their tech demos along with the sexy ladies? Because flawless skin is rubbish at showing off bump-mapping – or so says Eidos. Along with the usual poly-plumping Lara gets, her bumps-in-all-the-right-places now extend to her complexion. The shader-showcase isn't limited to Lara herself either: cast your eyes over these screens and you'll see they apply to Ms Croft's world too.

Lara has left her home at Core to be developed in the states by Crystal

Dynamics, and the new devs are hoping to wash that nasty *Angel of Darkness* taste from our mouths. In complete contrast to the last adventure, the focus is now on the constant, fluid motion of Lara through those (ahem) booby-trapped tombs. The action's looking more akin to the great set-piece trap-sequences from *TR2* than anything else. OK, so pre-release hype of *Tomb Raider* returning to its roots are nothing new to the wizened ears of us at PCF, but perhaps the fresh approach of a new team is just what the series needs to rediscover its strengths.



Bump mapping adds new crumbliness to the titular tombs.

in the pipeline

A tantalising glimpse of what the future holds for the eager gamer...

FEBRUARY 2006

Keepsake

Accompanied by a talking dog, you play a would-be wizard on her first day of school. Before this third-person adventure gets too Harry Potter, everyone vanishes and you have to find them. www.wickedstudios.com/keepsake

SPRING

Monster Madness

This four-player shooter mixes *Gauntlet* and *Stubbs the Zombie*, and sees you battling with your buddies to save your town from rampaging monsters. The game mixes online play with local players fighting together in a full co-op campaign mode as well as team-based capture the flag games. www.monster-madness.com



Shadowgrounds

Fans of top down shooters really should remember the classic *Alien Breed*. If so *Shadowgrounds* will set your nostalgia nodes twitching. The dynamic lighting used in the game is not just a pretty façade as some alien species will react differently to light; shine your torch and some of them and they'll scarper off into the shadows. Neat. www.shadowgroundsgame.com





MMOG Log

Money and queues?
Aren't MMOGs getting a bit
too much like real life?

Roma Victor, Brighton-based RedBedlam's real-cash-for-denari MMO made 1,500 accounts available, each with five, real English pounds worth of sesteres for pocket money back in December and it's about to go live in a big way. There's a fair bit of interest in this 'real-money-for-game-goods' business brewing in the City so efforts like **Roma Victor** are being watched closely. The gold rush for virtual economies is about to begin in earnest.

Too much craft, not enough world. **WoW** continues to suffer as a result of being far more popular than anyone could possibly have imagined – including developer Blizzard. Hence, 40 minute waits to access some realms are not uncommon, especially now everyone's sheltering indoors from the cold and worrying about fuel crises. Blizzard is opening new servers and offering migration, but only a few realms at a time; with the game's user base continuing to grow, and the release of the first expansion pack **The Burning Crusade** next year luring lapsed players back, the problem may never go away. When there's no room in Azeroth, the dispossessed will walk in **Guild Wars**. Find out more on www.mmologg.co.uk.



Players are becoming disillusioned by WoW's queues.

SPRING

Phantasy Star Universe

Combining both on and offline play this action adventure sees your world under siege by a malevolent force called The Seed. The single player campaign is huge, but it's the fee-based online mode that takes the biscuit. It's cross-compatible allowing both PS2 and PC players to play in the same worlds simultaneously. www.sega-europe.com



Empire Earth II The Art of Supremacy

We guess it's not water-lilies or sunflowers

DUE DATE February
PUBLISHER Vivendi
DEVELOPER Mad Doc Software
WEB www.empireearth2.com

If there weren't enough minions for you to enslave in *Empire Earth 2* then you'll be pleased to hear about the latest expansion for the era-spanning strategy beast. We're promised three new campaigns encompassing

even more of mankind's history, including the chance to act out your Napoleonic fantasies. Howls of 'Stop throwing, those bloody spears, at me!' will fill the air as you get to fight Zulu warriors, just one of the ten new combat troops.

The biggest change is the addition of two entirely new playing styles: the

Fealty and Tug-of-War modes. In the former, players on the ropes can declare 'fealty' and permanently ally themselves to another character. The Tug-of-War is also interesting, with battles fought over three, five, or seven map sessions with victory claimed by defeating a foe on their home map.

Joint Task Force

The battle for our hearts and minds continues

DUE DATE Spring
PUBLISHER Vivendi
DEVELOPER Mithis Entertainment
WEB www.jointtaskforce.com

With the whole world, its wife and assorted mistresses producing warfare RTS games it takes a lot to grab our attention. *Joint Task Force* is taking a bit of the game out of the genre and sticking in more of a military simulation, complete with supply lines, weather problems and media manipulation to name a few.

Set in the uncomfortably near future and covering the battlefields of Afghanistan, Columbia, Bosnia, Iraq and Somalia you and your UN response team have to set about plot-driven world



There's a
journalist.
Fire at will!

police duties. Collateral damage plays an integral part as you manage modern combat. With the press ever vigilant, civilians must be protected or funding will dry up. Buildings, however, can be collapsed around the ears of pesky snipers. Presumably so Western contractors have something to rebuild...

CITY LIFE

Set in real-time 3D this brand new city builder uses a powerful graphics engine to show off your soaring skyscrapers. It gives you the freedom to swoop between the gleaming spires of your beautiful new metropolis or zoom down to an FPS-style citizen's eye view. There are also six different cultures that need to be kept in balance to allow the city to grow and thrive. Keep the toffs away from the plebs or there'll be trouble... www.deepsilver.com



APRIL

The whirling frenzy that is a Star Wars space battle is reproduced well.



Star Wars Empire at War

Galactic conquest and Ewok culling

DUE DATE February **PUBLISHER** LucasArts **DEVELOPER** Petroglyph **WEB** www.empireatwar.com

Stick 'Star Wars' on any game and you guarantee that it's going to fly off the shelves; just look at how many copies the seriously flawed *Battlefront 2* sold. So when *Empire at War*, LucasArts' latest foray into the world of the RTS, was announced we weren't too excited. Thankfully it isn't just another *Command and Conquer* clone, possibly because many people who created *C&C* have worked on *Empire* too.

Skirmishers are catered for in both single and multiplayer, but the Campaign and Conquest modes are where the real entertainment lies. The former is motivated by story-driven missions and the latter is

more player-driven, with you deciding which planet to wage war on, *Total War* map-room style.

Both modes require management strategies as the more star systems slip through your fingers the less credit you have, and you can't buy Tie Interceptors with midichlorians alone. All your favourite characters are there, even lesser lights like Mon Mothma and the Cushing-tastic Moff Tarkin.

The presentation is perfectly *Star Wars* too. The action is a lot simpler than in *Homeworld*, only moving in one plane rather than full 3D, but in cinematic view, hordes of X-Wings dance like a galactic interpretation of *The Nutcracker Suite*.



All the classic space ships are present and correct, including the iconic Star Destroyer.

MAY

Rush for Berlin

As either the western allies or the Red army you have to deliver the final crushing blow to the Third Reich by sacking the capital. It's interesting in that it'll bring temporal manipulation to bear, for this is an RTS that deals in time. Alternate timelines can be split-off and revisited; delay in your advance and Jerry may develop super-weapons the Nazis never had. www.deepsilver.com



Ancient Wars – Sparta

Another historically accurate RTS this time puts you in the sweaty sandals of the Spartans. World Forge is particularly proud of its Ancient Wars Engine (AWE) and boast FPS graphical niceties for the first time in a strategy game. Best of all, all the units, buildings and the whole environment is physically simulated. www.playlogicgames.com



Heroes of Annihilated Empires

The main thrust of the game is the formation of huge armies and battling it out on beautifully created fantasy arenas. We are, however, promised a mix of RTS and RPG games with you beginning as an ordinary man, gathering followers into a fighting unit and develop your character into a heroic general. www.heroesofae.com

SUMMER

Championship Manager 2006

Flying teacups ahoy!

DUE DATE Spring
PUBLISHER Eidos
DEVELOPER Beautiful Games Studios
WEB www.championshipmanager.co.uk

The battle of the footie management sims with 2006 in their titles begins in earnest. Eidos will be hoping that the success of *Football Manager 2006* will have died out by release and that *CM2006* will get a clearer run. Unfortunately it will have to fight it out with *LMA Manager 2006* which will arrive at the same time. Gotta love the original titles, guys.

The biggest change from last year, and the one which Beautiful Games Studios are most excited about, is the inclusion of a 3D, isometric match engine. This gives you a much better idea about the height of passes and the accuracy of shots, and isn't just about looking prettier. While still not *Match of the Day* quality, it does improve on the air-hockey looks of previous title.

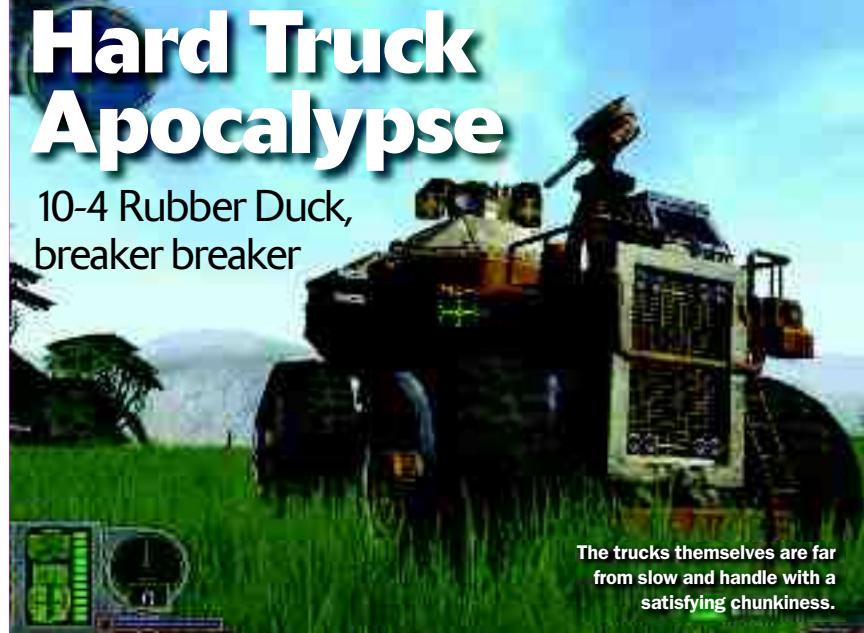
Eidos is promising a whole host of improvements, like the ability to talk to individual members of your team and to have a wealthy investor bankroll your spending if the club is in financial trouble. Whether this will be enough to mark it out against the other two giants is debatable, especially with *FM*'s wealth of stats and *LMA*'s superior looks. We'll have to wait and see.



The match engine should at least be a break from the stats.

Hard Truck Apocalypse

10-4 Rubber Duck, breaker breaker



The trucks themselves are far from slow and handle with a satisfying chunkiness.

DUE DATE March
PUBLISHER Buka
DEVELOPER Targem Games
WEB nival.com/exmachina

Perhaps it was those giant yellow Tonka toys of our youth that did it but we can't help liking hulking great haulage vehicles. They make us feel all manly. Grrr. So, *Hard Truck Apocalypse* won some PCF staffers over this month with its interesting blend of post apocalyptic, *Mad Max*-like freight vehicles and *Elite*-style action. Yes, '*Elite With Trucks*' seems about right. You start off with a rubbish little van, perhaps with some one-inch steel plating and a machine-gun bolted on for good measure, trade a few tons of clean water and scrap metal between the isolated townships then

buy more kit and weapons, arranged on your rig to taste of course, or if you can afford it, a bigger truck. Rinse and repeat. The badlands between the towns are full of bandit clans, so the bounty hunter route is always open, as is the old urge for a life of piracy. You can also take on missions for individuals you meet in the pubs of each town you visit. There's a storyline running through to keep some cohesion but the right to roam is in full effect. It's low-budget schlock and no-mistake, but it looks like there'll be plenty on offer to keep you trucking come March.



The freeform *Elite* model hasn't been applied to much other than space games.

GOSSIP!

Robin Williams is a BF2 fan, a camping sniper by his own admission. Blogger Kev Archibald got chatting with the star on the set of *Man of the Year*. Pics and more at thearchies.blogspot.com/2005/12/mork-me.html

AUTUMN

MX vs ATV Unleashed

There's a new game mode in the PC version of this console hit called Big Air Challenge, eight new tracks and seven new vehicles, but the best feature is the new track editor. This allows you to import your own textures and publish your tracks to race against others online. www.mxvstv.com



Snow

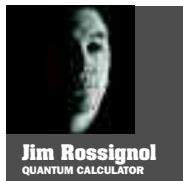
Remember the Johnny Depp film, *Blow*? Well, now's your chance to create a similar drug empire and become a successful drug lord. You begin strictly small-time, peddling weed from Mexico via a stewardess who needs some extra cash. You then work your way up to creating corrupt law firms, bribing officials and laundering money. www.2kgames.com



Demonik

Developed simultaneously with a feature film penned by horror hero Clive Barker, *Demonik* is a third-person action adventure starring you as a hell-spawned demon. You are bound to your human summoner and forced to carry out acts of wanton vengeance, eventually breaking free of these ties and running amok. www.terminalreality.com





Jim Rossignol

QUANTUM CALCULATOR

Watch this space

PARTICLE PHYSICS SPEEDS UP COMPUTING

Electron bubble processing

When quantum computers are old news

The entangled atoms of the quantum computer might well be obsolete before anyone has even managed to build a working model. New research from Brown University in Providence, Rhode Island, shows that firing electrons into super-cooled helium might hugely surpass the clever states of atoms in making 'qubit' computations, or computations derived from quantum states of particles. These smart electrons are slowed

by the helium and create tiny bubbles around themselves, which can be set in a magnetic field to be the 0s and 1s of a computation. Thanks to the obscure logic of sub-atomic physics, these bubbles can be both 0 and 1 at the same time, a state which allows for quantum computation. The 'spin' of the electrons can be read by lasers to allow logic gate-type operations (like those inside our boring old silicon chips) to be performed

inside the super-cooled helium cells. So what does this mean for computing? Well the machine would be capable of doing 1,000 billion billion billion simultaneous calculations per second, or '100 qubits'. Compare this to the fastest current silicon-based supercomputer, which can manage a mere 140 million billion calculations per second, or the human brain, which is estimated to process about half what electron bubble computers would be capable of, and you can see that it's an impressive leap, even more impressive than the equally theoretical quantum computers. Give or take a few decades, we can expect to see staggering leaps computer power over the course of the 21st century. uk.arxiv.org

Picture © Alamy

Holodisc storage

Colorado-based Inphase Technologies has just unveiled its solution for future data storage: a disc that stores information through the interference of light, a technique otherwise known as 'holographic memory'.

Such a technique will put 300GB on a disc slightly larger than a CD, compared to 4.5GB on a contemporary DVD. The technology is over 40 years old, but has only now found an application. It is set to challenge HD-DVD and Blu-ray for the storage media of the future. www.inphase-technologies.com

This month in Science

March, 1960

The first radio telescope came online, with the big dish at Jodrell Bank in Cheshire contacting American Pioneer V satellite. It has remained one of the top radio telescopes in the world for the last 40 years.

Cyber-Jeeves

Robotic butlers astonish Japanese technology enthusiasts at recent robo-convention

The International Robot Exhibition in Tokyo is normally home to legions of large, dull industrial robots, but this year it was full of 'domestic' robots from Japan and Korea. Two robotic butlers were demonstrated, one from Hitachi and another from specialist company Tmsuk.

The Tmsuk robot can clean and dust

Honda's ASIMO robot has been ahead of the domestic curve for some time now.

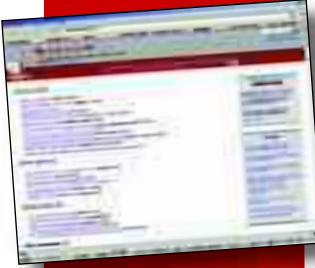
around the house, and has a built-in projector. The Hitachi robot EMIEW is more imposing, and is able to carry out numerous household tasks, such as identifying and collecting items from another room. Hitachi has worked hard to give the household robot some human characteristics, and its arm-articulation is remarkable, allowing it to gesture and manipulate objects. The robot also comes with sophisticated voice recognition software to allow it to accept vocal commands from its boss. The two-wheeled machine is kept upright by a sophisticated system of gyroscopes, something that helps it act in a convincingly humanoid manner.

These butler robots should be commercially available by the end of 2006, but you can expect them to cost as much as a brand new BMW 5-series.

www.hqrd.hitachi.co.jp/merle/emiew.cfm

THE BEST SCEPTIC SITES

Quackwatch
www.quackwatch.org
Stephen Barrett, MD is the retired physician behind the excellent Quackwatch – an online database of the scientific investigations into the ridiculous flimflam of so-called 'alternative' medicines. If you're worried about a treatment, check it out here first.



Randi
www.randi.org
The Amazing (James) Randi, now in his late 70s, writes a weekly exploration of the latest idiocy claimed in the name of the 'paranormal'.

The Skeptic's Dictionary
skepdic.com
An encyclopaedia of all information the discerning sceptic could ever need. Containing extended definitions of various woo-woo terms and claims, it specialises in the factual debunking of popular myths, including hypnosis.

Crank Dot Net
www.crank.net
This is an exhaustive directory of sceptic links, organised cleanly and efficiently into categories and sub-categories, linking thousands of websites covering any nonsense subject that should take your fancy.

The webpages

NEWS FROM THE DARK SIDE OF THE NET



Wikipedia's integrity has been compared that of the *Encyclopaedia Britannica*.

Wikipedia is facing scrutiny over its accountability. It has implemented its first rule controlling who is able to add new content. Following a high profile objection to an article made by former Kennedy aide John Seigenthaler, founder Jimmy Wales has chosen to prevent unregistered users from posting new articles to the site.

The significance of such a decision could be lost if either the size and scale of the Wikipedia project, or the passionate embracing of 'open source' philosophies, were to be forgotten. Beginning on 15th January 2001, Wikipedia has grown to over 2,550,000 articles, of which over 860,000 are in English. Where it stands out from any other form of encyclopaedia is the implementation of the Wiki mentality – allowing anyone who can access it the ability to edit

Wikipedia restricted?

Accountability rears its frustrating head for the online encyclopaedia project



Bartering

ONE RED PAPERCLIP

The internet has been home to innumerable money-making schemes, from the pretend rabbiticide of Save Toby, to the lunatic notion of selling books on Amazon, but no one has so cleverly kept his costs as down and his ambitions as high as the One Red Paperclip project.

Beginning with the titular paperclip, the man behind the site's plan was to exchange it for something of a slightly higher value. And indeed he did – for a pen in the shape of a fish from a pair of vegans in Vancouver.

The fish pen was not long for his possession, soon swapped for a Seattle doorknob. But that doorknob was perfect to replace a broken handle by a man from Massachusetts who no longer wanted his old barbecue...

A few exchanges later, and a skidoo has just been switched for a three day skiing holiday in Yahk, British Columbia. The ultimate aim is a house, or an island. Or a house on an island. It's not looking too unlikely either.

oneredpaperclip.blogspot.com



Manga-led

AMV HELL

It's hard to know where the practice of taking a cartoon and redubbing it with new audio began. Perhaps the oldest example would be Emma Thompson's dad taking the French language *Magic Roundabout* cartoons, turning the sound off, and making up his own stories to go with the pictures in front of him, resulting in the garbled nonsense we pretend we love today.

More impressive would be *Sealab 2021*, a reworking of the awful Seventies *Sealab 2020* with a far more rewarding script. The same goes for *Space Ghost: Coast to Coast*. But no longer is this technique for the televised. The internet is now overflowing with such content.

AMV Hell is the project of Alan Clontz and Brian Moore, who add music or dialogue to existing anime cartoons in short, sharp bursts. Most spectacular is *AMV Hell 3*, lasting over an hour with literally hundreds of cartoons. It's very funny, and can be downloaded as a torrent, or viewed directly here: tinyurl.com/d6b69amvhell.com



Secret Service

10 THINGS ARCHIVE

While primarily focused on an American audience, Smart Money's regular 10 Things column is a fascinating insight into the information that might not normally be at our fingertips. The archive on the site keeps every monthly column available, so you can learn the secrets of whichever service industry you're interested in. Want to know what your therapist won't tell you? Or maybe the knowledge your architect would prefer you didn't learn?

For instance, health food stores won't be keen for you to know the results of a number of studies, including those collated by Quackwatch.com, which all discovered that health advice dispensed by such stores was between "50 and 100% wrong".

Restaurants won't be pleased at your discovering that fancy foods on the menu can be fudged without needing to change the name on the menu (don't want to pay for truffles? Cover other mushrooms with truffle oil, and carry on). And dozens of other excellent, eyebrow raising facts. www.smartmoney.com/10things

the content. A recent survey published in *Nature* magazine found that, thanks to this approach, *Wikipedia* was just as reliable an information resource as the *Encyclopedia Britannica*.

TELL THE TRUTH

While those editing are encouraged to "uphold a policy of 'neutral point of view' under which notable perspectives are summarised without an attempt to determine an objective truth," this relies on the policing of volunteer admin staff, and the consensus of the user base. This has been questioned by John Seigenthaler, after an article appeared linking him to the assassinations of both Robert F Kennedy and John F Kennedy. Writing in *USA Today*, Seigenthaler stated that the piece had remained on the site for months, rather than being filtered out by the admins as Wales states such articles would be.

In an interview with CNET, Wales stated, "The system failed in this case. A bad entry was kept for some time until [Seigenthaler] actually fixed it himself. It seems like the key issue is we're having some growing pains."

The piece, it has emerged, was the work of a man called Brian Chase,

who posted it as a hoax. In a comic turn of events, after Chase quit his job to prevent embarrassment for his bosses in the current fuss, the remarkably congenial Seigenthaler has begun campaigning to Chase's employers that he might get his job back. No doubt the full story will be chronicled on Wikipedia soon. **PC**

"Wikipedia includes over 2.2m articles, of which 850,000 are in English"



Forum Beyond 3D
Geeky and yet accessible, the Beyond 3D forums are the web's last source of future information and rumour-mongering regarding graphics cards, regularly monitored by 3D professionals.
www.beyond3d.com



Beauty SAMOROST

Flash has released some real artistic majesty, with obscure animations that draw in the viewer by inviting exploration with the cursor. It's hard to think of a better example than what might well be called Samorost.

This animation combines simple clicking for progress and gentle puzzles, in a beautiful hybrid world. Using drawing and photographic collage, rusted metal pipes are adorned with delicate vegetation, cliffs hide subtle faces, and wildlife interacts with technology as a small, plain cartoon figure makes his way across the locations.

Sharing the narrative-free structure of Markus Schinwald's films, a similar desire to discern a story is inspired and frustrated.

Music enchants and enhances each scene, and on one occasion cleverly interacts with the peculiar method for recovering a metallic vessel from the branch of a tree, with the help of a particularly hip owl. Utterly gorgeous, and delightfully blurring the gap between games and art.

analogik.com/multimedia/amanita/samorost/samorost.swf



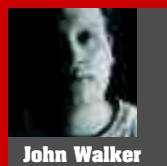
Bullet time SUDDEN IMPACT!

Ammoman.com is one of those horrid sites that sells deadly weapons to the general public. What makes it far more scary is the amateur presentation, reminding you quite how regular the sale of guns and bullets is to Americans. Closed Wednesdays.

Tucked away in a back corner exists something rather cool. Sudden Impact! is a page of photographs taken of scary bullets penetrating household objects, taken with a PCO SensiCam camera, using the 'Real Time Trigger System', with exposure times of under a microsecond.

Anyone who has discovered the unbridled joys of the Discovery Channel's *Mythbusters* will already be familiar with the notion of firing weapons into blocks of gelatine. Sharing its consistency with human flesh, the FBI use it for studying ballistics, and the photograph of the bullet's pathway here should send a shiver down your spine. Also blown up are apples, oranges, eggs and Coke cans, all of which died first of natural causes.

ammoman.com/gunshots.html



John Walker

HAS SCORES TO SETTLE

Copyright watch

"I can't have your *what* music? Oh! *Sheet* music." John Walker didn't want it anyway

Something of a competition is developing in the music industry. No, it's not a "Who can find the best and most talented artists" competition. It's the, "Who can be the most repulsively greedy" challenge!

You've still not done anything to voice your disgust at the prospect of large companies bringing kids to court for illegal file-sharing. Meh, whatever, it hasn't happened to you yet, so why say anything, eh?

Now, you won't do anything about the statements of Music Publishers' Association president Lauren Keiser, who has clearly recently discovered this new-fangled invention the very hippest of the hip children are calling 'the internet', will you?

Launching a campaign against websites that contain song scores, Mr Keiser is not at all interested in the petty thousands of dollars of fines that the RIAA, BPI and the rest have been casually extracting from poor and vulnerable music score downloaders recently.

Playing along with your favourite bands may be a thing of the past.

Oh no, it appears he wants them to do jail time!

Promising to target "very big sites that people would think are legitimate and very, very popular" at first, Keiser doesn't think that money alone will do the trick. If those handing out the already draconian punishments would "throw in some jail time I think we'll be a little more effective."

David Israelite, president of the National Music Publishers' Association, managed to wade in with the most idiotic comment of all, however. Apparently not having noticed that the debate matured beyond such ignorant and hyperbolic rubbish about 15 years ago, he duly pronounced that "the unauthorised use of lyrics and tablature deprives the songwriter of the ability to make a living, and is no different than stealing." Yes, no different at all, David. Apart from nothing having been stolen, of course. But otherwise, no different. Copyright Watch would like to condemn writing stories about people dying. After all, it's no different than murder.



Picture Chris Garbutt

PCF Mail

DISCUSS HOT TOPICS AT forum.pcformat.co.uk

Customer service

I'd like to mention the fantastic service I received from Komplett.

I bought a stick of 512MB DDR3200 back in March and have been basically underclocking it at 333mhz with no problems on my old motherboard (We can't all afford the latest gear...). A month ago I upgraded to a 200FSB motherboard and had loads of BSOD and other memory glitches. My original 512MB RAM worked a treat but the newer one wasn't happy unless the FSB was <190. I asked Komplett for help and they said to send the memory back for testing. Two weeks later I received a brand new 512MB stick which has

been working beautifully. You may think that two weeks is a long time to wait but both Christmas and New Year fell into them. All that even though nine months had passed since I bought the memory!

ANDREW PARKER

Andrew.J.Parker@rbs.co.uk

Carmack quoted

I read an interview with John Carmack and he mentioned that software sales were down to half of what they were three years ago. Gaming is as popular as ever but pirating on the internet and copying between friends and acquaintances are to blame. I don't know why developers/publishers



GET PCF THE
EASY WAY!
SUBSCRIBE ON PAGE 132



Worth getting out of
bed for? You tell us.

Mail of the month

OVER TO YOU
Is it possible to find
love on the internet?
Turn to p162 to
find out

I've just installed one of the Elan Vital Greener SSM PSUs, the 450 watt model, and I want to let you know of some differences between it and the 500 watt unit you tested.

1. The cables are all wrapped in mesh and colour coded.
2. The build quality on the model I have is perfectly acceptable.
3. The molex connectors are an easy to disconnect type where pressing on the grip pushes the connector free from the socket.
4. The cables are all long enough to tuck out of the way (though being modular would be better, as you say).

5. There are four S-ATA connectors where often in my experience there are only two.
6. It's quiet! I've been using my PC for several different tasks so far I haven't heard the fan start up (which I'm hoping is a good thing!). I realise you were giving the supply a good hammering but I think it's worth bearing in mind that a general purpose PC is used for more than just gaming and in those times, having a quiet PC is really cool!

I thought it worth sending you this because I read your

review before receiving the power supply and had I read the review before ordering I would have bought something else. I'm glad I didn't; this PSU, along with four case fans from www.quietpc.com has brought down the noise my PC makes by an astonishing amount. Thanks for your time and keep up the good work.

Regards,

TIM HALE

tim@teccy.com

PCF says We're glad you're pleased with your purchase.



Mail in and win

We've teamed up with ace memory suppliers Crucial www.crucial.com/uk to give the author of our letter of the month a fantastic 512MB Gizmo! USB memory drive worth over £30. It works flawlessly with every version of Windows after Me.

You can air your views and write to the team at PCF Mail, PCFormat, 30 Monmouth Street, Bath, BA1 2BW, or via email at the address below. Or you can visit our forum at forum.pcformat.co.uk.

pcfmail@futurenet.co.uk

haven't made a bigger deal about people backing up software on rewriters. If you mention to a friend that you have a new game and either yourself or they have a rewriter there is almost a social obligation that the game is copied for them, as opposed to them buying it. I think a poll would reveal that most people only use rewriters to pirate and not to back up. PC World already sells new releases for £20, and reducing copying would drive down prices even more.

A couple of months ago I read that French courts ruled against companies protecting discs as the customer has paid for that product and not just the disc. I still have CDs (8/9 years old) in good condition, so it's possible that backing up is not always necessary. In the past I'm not aware of any outcry at not being able to back up VHS. Also people's jobs are at stake and for the surviving developers there will be less money for future developments (engines, staff and so on), and financially risky games won't be made. A lack of development in PC gaming is to be avoided at all costs.

IAN MILLS

ianmills_405@fsmail.net

PCF says We're not sure where you've been for the last eight years, Ian, but games publishers have been doing everything they can to stop people copying CDs. DRM or StarForce anyone?

Bendy bandwidth

I read your broadband article at my brother's place and how you think there's nothing available to help speed up broadband streaming and all that. Well, this company has and has been saying it will solve the problem for the past five years and has just released its 'first' product. Have a look:

www.rimsemicon.com/products/embarg and www.rimsemicon.com/solutions/ethernet

ALAN

efex172@hotmail.com

Copy protected

Now this isn't about your fine publication as such but about the games you are reviewing. Over the last couple of months I have purchased several games (FEAR, Civ4 amongst others) that refuse to run on my system due to new "copy protection" that looks for traces of software that could possibly be used

to emulate a virtual CD drive, then throw a strop message if they find one or any SCSI based storage. I do use a virtual CD drive in a virtual PC running Linux so these software companies expect me to uninstall a piece of software that I legitimately purchased to run another legitimate piece of software? Or on another of my PCs remove my SCSI DVD drive (thus making using their software unusable anyway). Contact them and they are completely useless verging on accusing me of piracy for daring to run software they disapprove of, and trying to return the games themselves is an exercise in futility with most retailers.

You could make our lives easier though by publishing warnings in the game reviews when companies do this so that those of us who have these problems know in advance to take our money elsewhere in the hope that companies see the light and stop making it harder to play games we have paid good money for.

Sorry to rant at you about someone else's faults but at the end of a long day I don't want to have to fight with games that are supposed to be about enjoyment.

TIM

support@prometheusuk.freeserve.co.uk

PCF says It's all too true that in desperation to clamp down on piracy, many publishers have gone too far with their copy protection, often preventing legitimate users from playing their games. Some schools of thought suggest that

Forum fad of the month

The PCFormat Forum meet-up

NEW YEAR'S SPECIAL

Find this thread at:

forum.pcformat.co.uk/viewtopic.php?t=41240
forum.pcformat.co.uk/viewtopic.php?t=41262

I don't smoke. Never have, never will. However, whilst visiting friends and family this Christmas, I have realised that I actually swear like a trooper at times. Sometimes, just as an adjective, with no malice in the statement at all. It's like an addiction.

Thus, I decided to create this thread. The half-brother of the smoking thread. I encourage any-and-everyone who swears to try and quit swearing with me. Just think. We'll all be doing our bit to make the world a

slightly happier place to live in for everyone else. Who is with me?

MR CLARK

PCF says Our forumites looked to their peers for moral support in sticking to their New Year's resolutions – in these cases to stop smoking and, less popularly, swearing. Nothing helps the willpower like a little support from your friends – so good luck to all who participate.

this is even a factor in driving people to piracy... talk about a vicious circle.

Ad-dled

I'd just like to express my views on adware and spyware, as it seems all I hear nowadays is screams of anger about the latest tracking cookie that has found its way onto someone's computer. After looking in detail at current software, in my opinion responsible adware and most 'spyware' is not a big issue. By that I mean software that will display a few pop-ups now and then, to help give something back to the software developers. You can't just get something for nothing, and a few targeted ads based on what you look at on the net seems a great deal to me. As for spyware, a little toolbar that spots keywords in your browsing and reports back that you go on computer websites cannot be compared to keystroke loggers or diallers. This is no different to market research done on the streets, just with a different method and some great software with it. Even dialler software can be a fair deal in my opinion if it is openly and adequately explained to the end user and it does not change your settings (just connects when you want it).

I am of course fully opposed to the more serious forms of adware and spyware that are difficult to remove and have more serious effects, like keystroke loggers and the notorious Winfixer adware. But I've created software before, and I don't think it's right to complain at small developers for bundling non-harmful adware.

I was shocked this week when I went on the Government's Get Safe Online website where the descriptions of adware (described as spyware)

implied that most pop-ups are for porn websites and associated them with viruses. Of course, there are many programs out there on the internet that will do that, but it is unfair to imply that good products such as Gator eWallet is going to "make you a target for online criminals".

People need to realise that not everything on their spyware scanner is sending credit card information, and that smaller software developers cannot afford to give their software away. Nowadays, the problem of adware is exaggerated beyond belief and it's not always such a bad option.

PETER GOULD

gould.peter@gmail.com

PCF says While it's true that adware isn't necessarily storing private information, and is often benign in operation, we're strictly opposed to anything that installs itself on a PC without warning or full explanation. Not only that, but many are deliberately difficult to remove. Ultimately, it's our machine and we reserve the right to choose what goes on it.

Two card brag

I have recently bought two NVIDIA 6800 GS cards which I am running at present in SLI mode. Seeing as this is quite a good card and as I spent over £300 quid on the two of them I was wondering whether my SLI is actually working or not.

So I disabled the SLI and ran 3DMark05 on one 6800 GS in 1024x768 and scored 5787, which I thought it was quite low for that card.

I then enabled the SLI and ran the two cards in 1024x768 and it scored 8103. I think I have a right to be happy with this seeing as the 7800 GT ran in

7105 on your coverdisc results, and that card is very expensive (I think). Based on these scores, I take it the SLI is working properly.

RICHARD BROWN

mrrjbrown@hotmail.com

PCF says It certainly is, and well done on bagging a performance bargain. May you have many hours of dual-card powered gaming joy.

Score to settle

Hi guys, Just seen on BBC news that the US Music Publishers' Association wants to close down sites that transcribe song lyrics.

"Mr Keiser said he did not just want to shut websites and impose fines, saying if authorities can "throw in some jail time I think we'll be a little more effective".

Mr Keiser wants to send people to jail for writing down lyrics of a song they've heard and posting them on the internet. Mr Keiser wants to jail people for writing down notes to music and putting them on the internet. Mr Keiser offers no such alternative service. Mr Keiser has lost touch with reality.

How ridiculous is this? It seems to me that the logical conclusion is that it will shortly be illegal to sing along to your favourite music, or play it on your own instruments. Will you eventually be jailed for singing a song where other people, who haven't paid to hear that song, may accidentally hear you.

Absolutely unbelievable. Can you look into this, and see if it's really true? Because I honestly can't believe that these people think this way.

Thanks,

ADAM TODD

Adam.Todd@affiniti.com

PCF says Sadly it is true – although quite how enforceable it will be is another matter. They certainly won't stop us singing merrily in public.

Back handed

Thinking your magazine only of interest to game-playing techy nerds, I have always stayed well clear. That is, until I saw the glorious Jennifer Young staring down at me from the cover of issue 182. Not a bad looking girl, and not a bad read either. I might buy issue 183.

GARY CLARK

garyc@tpc-london.com

PCF says Being a magazine written for game-playing techy nerds, we also pride ourselves on a high standard of literacy and an intelligent world view. We hope that's what you were referring to when you said that the mag was 'not a bad read' and not just the fact that there were more pictures of Ms Young inside.

A measly 7800GT? Pah! Richard Brown has found more for his money.

Redress the balance

I'm a small indie game developer. Your magazine gave my last game Democracy a good review (PCF176, 70%), and I'm thankful for it. However, it seems that increasingly that PCFormat has been laying into copy protection and defending programs like BitTorrent without really discussing the issues in a fair manner, and I'd like to suggest that you run an article on the topic.

I know that what the RIAA and its ilk do is bad, I hate what Sony has done with its music CDs, but I totally understand the need for copy protection. If I don't sell enough games, I don't eat. Now if I make bad games, that's nobody's fault but mine; but if I make good games and people steal them and don't buy them, it's a disaster.

If, in six months time I'm not earning enough to pay the rent, I'll have to go get a sales job somewhere. That will mean no more new games from me. People often assume that any games company is some super rich mega corp they can rip off without feeling guilty, but pirates happily crack and share my games, acting as though they are Robin Hood when defending such actions.

How about a PCFormat article of the real effects of piracy? Nobody is really covering the topic, and it's not true to depict it as a simplistic 'innocent consumer' vs 'evil megacorp' situation.

Cheers,

CLIFF HARRIS

www.positech.co.uk

PCF says It's a fair point, although we tend to feel that we're redressing the balance by pointing out DRM flaws, since the industry bodies and police forces actively uphold the existing anti-piracy laws. Still, how's this for a non-biased stance? Piracy is bad, kids. Don't let the devs starve. But equally, see Tim's letter opposite as well.

THE ATTIC Webcam astronomy

There must be a reason for the attic beyond storing musty old school reports and elephant skin suitcases. We will bestow it with a truly lofty purpose.

THE BATHROOM Video on the toilet

Create your own digital dunny with little more than a PDA. Just for Pete's sake don't drop it.

THE BEDROOM Cable choices

Trailing cables in the way of seductive shimmery? We settle the old debate of how best to network.

THE LOUNGE A real computer desk

Let's be honest, there simply isn't room for a hulking great PC case in today's minimalist design-haven lounges. We try our hand at a spot of joinery in the name of tidiness.

THE DOOR Home security

Keep the undesirables out, or indeed the children in with your own network of CCTV cameras.

"We're going to help you turn your home into something that is unique and splendid"

hack your home

Transform your tatty bungalow into a unique digital nirvana in seconds! Alright, days...

We're a lazy people, really. Just a generation ago, folk were still building their own radios and televisions rather than buying the latest over-styled whatever straight from the shelf. Now, the classic Eighties build-it-yourself toy range Zoids has become pre-constructed action figures – that's how low we've fallen. No more of it, say we – the PC is the ultimate DIY technology, beautifully modular, endlessly customisable. But let's think far beyond adding a case fan here, hideous striplighting there – the plan here is to integrate your PC and its associated gadgetry into your house itself. No more plugging a battered iPod into a greasy cassette adaptor in the kitchen radio, no more awkwardly balancing a keyboard on your knee to fast-forward through a movie playing on a battered Pentium 3 Beige-O-Tron in the lounge. No more dusty CAT5 cables looped around the banister on the stairs.

Over the next eight pages, we're going to help you hack your home into something unique and splendid. Learn how to build a giant, table-sized touchscreen you can draw or write directly into Windows with – ideal for design work or strategy gaming. Or how to discreetly fuse a media centre PC with a coffee table, so your wood-panelled lounge isn't bespoiled by LEDs and cables. Alternatively (or hey, as well!) catch a thief with a webcam security network, escape from the pressures of family life to your newly-digital shed or a spot of PC-augmented astronomy in the attic.

Of course, it doesn't stop there. Your imagination (and budget, and house value, and skill with powertools) is the limit. Come up with any ingenious home hacks of your own? Let us know at pcfmail@futurenet.co.uk

THE OFFICE Whiteboard PC

Some people use their home for work to healthily supplementing the relaxation factor. A touch sensitive whiteboard PC is perfect for those big projects.

THE BACK ROOM A pro approach

We look at the equipment behind a professional home hack. There's a lot less messy Blu-Tac for a start.

THE SHED Wireless den

Blend modernity with your natural roots by communing with the internet amongst the flower pots.

Illustration Rod Hunt



OFFICE

Project #1

A whiteboard PC

Throw away your keyboard and mouse, give your monitor away. **Luis Villazon** has altogether bigger plans for your PC

When the Tablet PC hit the shops three years ago, we enthusiastically greeted it as the herald of a new era. At last, we were to be freed from the ridiculous trinity of keyboard, mouse and screen. From now on there would be only workspace. The screen would serve as the output and input devices simultaneously. The distinction between text and graphics would blur to meaninglessness. Technology had finally advanced to the point where the power of computers could be combined with the intuitive simplicity of pen and paper. Truly it was the Dawn of the Age of Aquarius.

TAKE YOUR TABLETS

Except that hardly anyone bought them. At PCF, we wanted the Tablet PC to thrive to the point where it replaced not just laptops but desktop PCs as well. In our utopia, giant desk-sized versions would be sold with a leg at each corner. There would be no vertical monitor to strain the eyes, no keyboard to cramp the fingers, no mouse to

send the coffee cup flying. Just a single, interactive, desktop surface. Instead, the Tablet PC became a curiosity, used only by so-called "corridor warriors" – and how many of those do you know?

Eventually, tiring of the computer industry's failure to read our minds and produce the computer we were dreaming of, we decided to build our own. A desk-sized LCD screen doesn't exist and would be far too expensive anyway so we used a pressure-sensitive, interactive whiteboard, beloved of classrooms and conference centres everywhere. The screen image is overlaid on the whiteboard with an LCD projector and we hooked them both up to a Tablet PC so that we could get the handwriting recognition technology built-in to this version of Windows.

It was a brilliant plan, on paper. But almost immediately, we hit the problem of the projector angle. In a standard whiteboard setup, the screen is mounted vertically and the projector beams the image from above and behind the user so that you minimise the shadow cast on the screen. If we rotate the entire

arrangement through 90 degrees, we ought to fix the projector to the wall in front of us, facing back and down. Unfortunately, with the desk pushed up against the wall, the projector was too close to be able to throw a large enough image to fill the whiteboard. And with a desk that faces a window, you have the additional problem of having to mount the projector onto a vertical pane of glass. Our solution was to mount the projector above and behind again but at a much steeper angle than usual and mounting the whiteboard at a slight angle, like a draughtsman's table.

BOARD MEETING

Harder to solve were the limitations of the whiteboard itself. Tablet PCs sense the proximity of the special stylus using capacitance so you can rest your hand on the screen without triggering it. The whiteboard will register contact from any object. This is fine for tapping buttons, but it can be tiring to hand-write for long periods while keeping your arm off the screen, particularly near the top of the board. Even more restrictive



Location photo: Rob Scott

is the lack of a right mouse button. A single tap on the screen counts as a left-click, the Tablet PC edition of Windows XP will interpret a tap-and-hold as a right-click but this is ignored by all games and is tediously slow even in office applications. The whiteboard we used incorporates a small button on the pen tray that can be pressed to turn the next pen tap into a right-click but it's still cumbersome.

Sadly, the right-click limitation ruled out our whiteboard for any game more complicated than solitaire, but our experience with other applications was generally more positive. With Word, we found it perfectly possible to write longhand into the handwriting recognition panel that Windows



What works and what doesn't

Six popular programs in glorious whiteboard-o-vision



MS WORD

You can't write directly into the document space but it's actually more comfortable to write into the handwriting recognition area along the bottom anyway. If you prefer the keyboard, you can use the Tablet Edition one, or the SMART board one, or even the Windows Accessibility one. All work pretty well.



EXCEL

On a screen this size, your spreadsheet is limited only by the resolution of your projector – horizontal scrolling becomes a thing of the past. Accurately entering formulae and numbers with the pen is tricky though, so it's best to stick to the onscreen keyboard for this fiddly little job.



INTERNET EXPLORER

IE is almost entirely controlled by left mouse clicks so there are no problems on the whiteboard. You don't gain very much either, except a large viewing area and the 'excitement' of entering URLs freehand. The ability to overlay ink on the Windows screen is good for web design work though.



Putting it all together

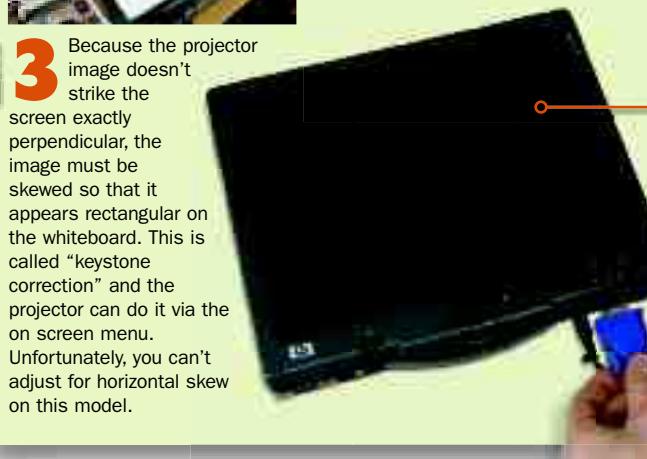
Build your own interactive desk from off-the-shelf components

1 For the desk surface, we are using a SMARTBoard Traveller available from www.steljes.com. This is the smallest interactive whiteboard that the company produces, but it's still huge in this context, so we have opted to mount it at a slight angle to make it easier to reach the top edge.

2 The projector needs to be mounted at a steep enough angle that we don't cast head shadows onto the screen but far enough away that the image is large enough to fill most of the board. In Luis' cramped office, this requires compromise and a novel mounting bracket.



3 Because the projector image doesn't strike the screen exactly perpendicular, the image must be skewed so that it appears rectangular on the whiteboard. This is called "keystone correction" and the projector can do it via the on screen menu. Unfortunately, you can't adjust for horizontal skew on this model.



4 The Tablet PC connects to the projector with a VGA to DVI lead for the image output and a USB connection to drive the menus. The whiteboard also uses a USB cable and 'looks' just like a graphics tablet, as far as Windows is concerned.

5 As well as the drivers for the whiteboard itself, the SMART board also has software to allow you to draw on top of the Windows desktop (for annotation) and to insert pen doodles directly into certain applications as embedded images. MS Office applications support this as do most of the major communications and conferencing programs.

6 Frequent recalibration of the whiteboard is essential, because Windows has no easily defined method of telling which area of the whiteboard corresponds to which area of screen real estate.



JOURNAL

The whiteboard isn't pressure sensitive – you are either touching it or you aren't – so you can't do any proper graphic design. But *Journal*'s freehand doodling environment is a therapeutic way to sketch out ideas and annotate your drawing. If you later want to convert the writing to ASCII text, you can.



BROTHERS IN ARMS

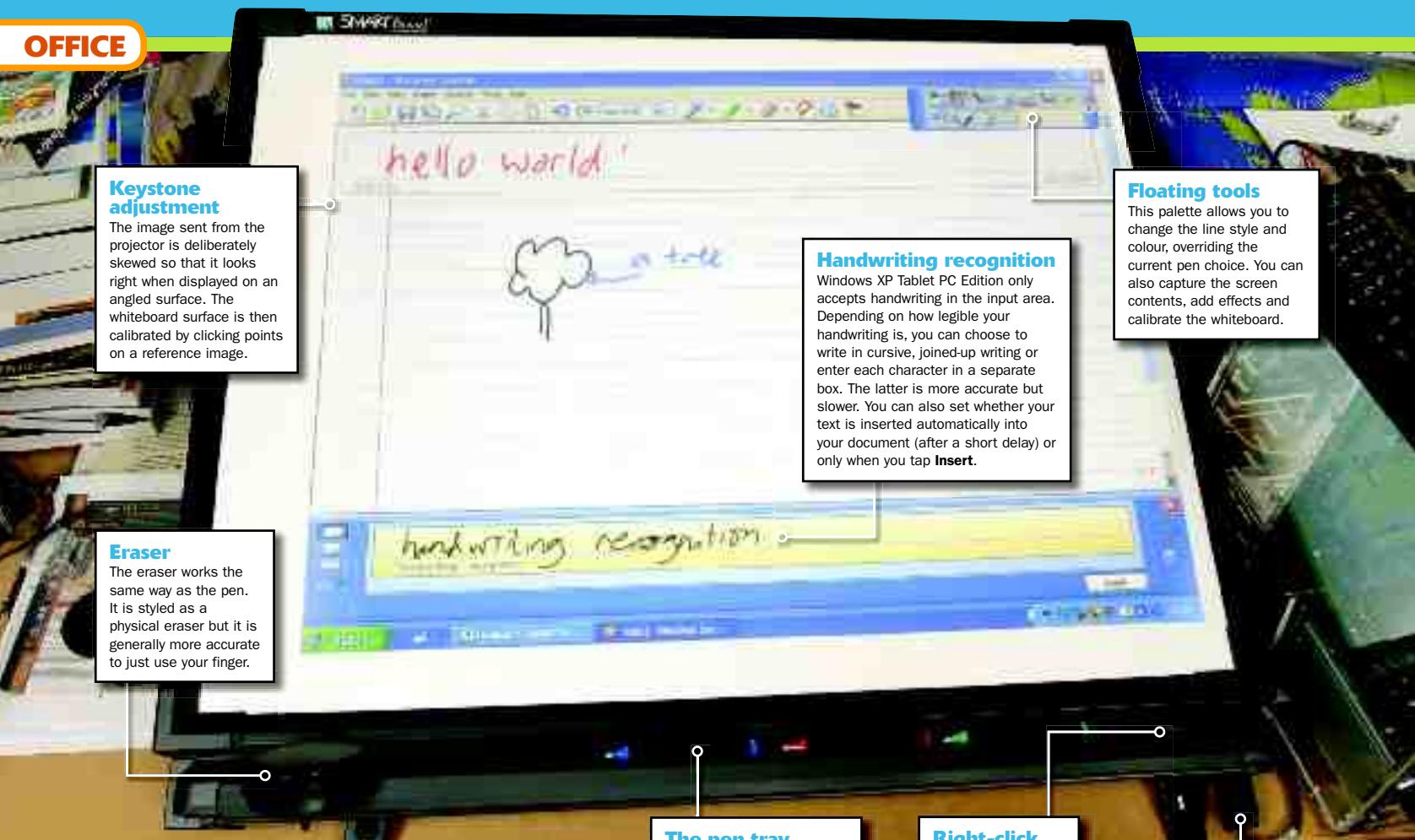
Games are much less satisfactory. First-person shooters are out, as there's no keyboard to control movement and no right-click to control mouse-look. Even a non-real-time title like *Brothers in Arms* is entirely unplayable because there is no way to easily change the viewing angle.



ROME: TOTAL WAR

Have you ever tried playing an RTS without right-clicking? It's a non-starter. Also, most games bypass high-level Windows function calls when processing mouse and keyboard input. This means that the SMART board driver is often ignored by the game, leaving you with no control even of the menus.

OFFICE



You can touch this

In the future, PCs could be controlled by touch...

3M's Microtouch ClearTek
(below) applies minute voltages to each corner of the screen. When you touch any part of the screen, you drain a small amount of that current. The screen can determine where you have pressed by comparing the drain from each corner.



Surface Acoustic Wave
technology uses transducers at the corners to send ultrasound across the screen, which your finger will interrupt when you touch it.

This system offers the highest image clarity because there are no extra layers applied to the screen but it can only detect fingertips – a pen nib is too narrow.

Projected Capacitance or Near-Field Imaging screens (below) analyse subtle distortions in an electrical field projected by the screen. They are sensitive enough to detect the difference between a gloved and ungloved finger.



places at the bottom of the screen. On a huge screen like this, the handwriting recognition's responses actually seemed better than on the LCD screen of the Tablet PC itself. For QWERTY diehards, we could, of course, have plugged in an external USB keyboard but it is far cooler to switch to the on-screen keyboard and type directly onto that. There is an undeniable *Minority Report*-style thrill to be had from physically touching your desktop icons. If you want to insert a doodle, you can draw directly onto the screen and then capture your image as a Word graphic so that it becomes embedded in your document.

Powerful though this functionality undoubtedly is, it's really just a novel way of interacting with an old-school application where text and graphics still sleep in separate beds. The Tablet PC *Journal* application comes closer to our vision of the future. This is really just a

souped-up version of MS Paint that makes no distinction between text and graphics. The clever part is that you can subsequently select some or all of your hand-written scribbles and run the recognition engine on them to convert them to text. If you choose one of the cursive fonts and match the size correctly, it works just like a handwriting neatener-upper.

THE FUTURE?

The system we have put together here isn't perfect by any means, and it will still cost you about £2,000, on top of the price of the Tablet PC, to set up. But it is built using technology that's widely available today and it is already enough to give us a glimpse of what could be done if manufacturers sensed a real market. As a PC, it's prohibitively expensive, but as a little slice of the future, it's surely a bargain.



Project #2

Hide your PC in a table

Is your lounge's cool, stylish ambience ruined by the whirr of an asthmatic PC? Fear not **Alec Meer** has the solution...

Forget all this kerfuffle about designing PCs that look good in the living room; the only way your media centre is ever going to blend in with your colour-matched furniture is if it's entirely out of sight. But let's face it, simply stuffing it under a sofa cushion and hoping the dog doesn't chew it really isn't going to cut it – instead, it's time to take a powersaw to that priceless teak coffee table, baby.

KNOCK ON WOOD

Our scheme isn't hugely complex, when it comes down to it – essentially we're making a PC case so outsized that it doesn't remotely resemble a PC. To paraphrase, it's more table than machine now. Lacking either the finaces or the will to carve up something valuable, we've instead plumped for an attractive £50 IKEA coffee table, which suits our purposes specifically due to being blessed with a series of compartments underneath it. A stack of magazines in this nook, a speaker or two in these crannies – and a MicroATX Pentium M rig in this hole. Our first impulse was on of extreme laziness – just bung an AOpen small form factor case into one of the compartments and job done. That's no fun at all, of course. So, the case got chucked, and the motherboard – complete with silent

external power supply – mounted onto a wood surface, which in turn was incorporated into a newly built draw. This fits neatly inside one of the coffee table's compartments, and slides in and out gracefully on a set of runners.

Hurrah – one invisible PC. But it's still not enough. We need to be able to access its most media centrey functions without glimpsing into the ugly mash of wiring inside that drawer. So, with the expert help of the incomparable Andy King from *Good Woodworking* magazine (who you may remember from our arcade cabinet project back in *PCFormat* 161), we set about enabling discreet tabletop access to the essentials – a slot-loading DVD drive, memory card slots, USB and firewire ports and even a headphone socket for late-night movie-watching. It was a fiddly old task and no mistake – we had to make the holes in the wood as small and subtle as possible, while still making it straightforward to insert and remove cables and cards. As it is, SD cards need to be removed with pliers and the CD eject button pressed with a pencil (or, in thematic keeping, the end of a teaspoon), but these can be fixed further down the line. Finally, we built a power switch into the handle

of the draw. Once augmented with a wireless keyboard, the rig works fantastically, and with the exception of a single cable running from the back of it to an HDTV set, you wouldn't know there was a PC lurking in the table's woody innards.

BEHOLD, SUPER TABLE!

However, the jig isn't up yet – we have grand plans for this coffee table. Next on the list is cannibalising an old laptop and building its touchpad and keyboard into the surface of the desk, then after that a small LCD secondary screen (ideally a touch-sensitive one), so it can be used for music playback without the need for a big telly. This coffee table has a long and prosperous future ahead of it...

Hot slots

Our favourite part of the table without question – this slot-loading Pioneer DVD drive has just enough grunt to force a disc out high enough to easily remove. And sliding a movie disc directly into the table is a wondrous feeling.

Push the button

A gentle touch of this LED-lit switch activates our near-silent table PC. In time, we might attach a wood plug over the top of it so as to better perfect the disguise.

Card sharp

Memory cards can be popped in and out of here at a whim, though SD cards are a bit of a struggle – we'll widen the slot down the line.

How the pros do it

If you want a job done properly, get someone else to do it

It should be obvious

that we at *PCFormat* are not averse to getting our hands dirty, but there are professionals in the home hacking trade as well, with some impressive designs. Smart House UK (www.smarthouseuk.com) specialises in fitting cabling into new houses, and kindly provided us with a glimpse of the potential of the technology.

The main advance is in 'intelligent cabling'; rather than having your TV, telephone and

audio through noisy analogue cables, a CAT5e network (usually used for ethernet networks) provides high speed cabling for all types of data in the home. Entertainment is still the primary requirement for one of these systems, as Project Manager Pete Kite explained: "The exciting area is the audio systems that are available using multi-source and multi-room interfaces. This allows all types of media to be distributed throughout the property via ceiling

How to mod your table

Turn your furniture into a media hub



This coffee table became a media centre once we got our hands on it.



1 With the top upside down, set out the components to make sure they fit within the drawer opening.



2 Rout out a slot for the DVD drive to let the facia plate in flush with the surface of the coffee table.



3 The next task requires you to run a 6mm access groove in line with the slot on the DVD player.



4 Accurately mark out the position of the eject button and rout out a large enough hole to fit it through.



5 Use the card reader and USB ports as templates and rout out sufficiently large openings in the table's surface.

**Stereophonic**

The PC's connected to a 7.1 speaker system from the back, but eight channels of violent noise isn't quite as good at 1AM. So, just plug some headphones into this socket – or alternatively a microphone, if drunken karaoke is your thing.

Easy as USB

These USB ports will cheerfully take most flash drives, but the odd MP3 player like the iPod shuffle which has the USB male plug flush against the body of the unit may require an extension cable.

Location photos: Joy Sessions TV screen © Disney Enterprises, Inc. & Walden Media

IMPROVE YOUR HOME WITH...**Wireless modem routers****Netgear DG834G**

£66

www.netgear.co.uk



Netgear's best-seller has no serious rivals. And what's more, there's some excellent bundle deals available with it. The only shame is that the LEDs are bright green...

BT Voyager 2100

£75

www.bt.com



Looks shocking, doesn't it? Shame, since as a package, this is a superb router/modem combo. If you're buying one for a novice, the Voyager's setup instructions are a doddle.

Linksys WAG354G

£60

www.linksys.com



The newest variant of those listed here, Linksys' new box throws in support for the new ADSL 2+ standard to boot. Setup is a piece of cake, and it's good value, too.

US Robotics MaxG USR019108

£84

wwwUSR.com



Another new model, this new offering throws extended range and throughput into the mix. Designed to compete with MIMO kits from the likes of Belkin and Linksys, this is an excellent bit of kit.

or wall-mounted speakers." Using the living room as a central hub, inputs such as sound systems and DVD players are hooked up to a patching system, such as the Systemline Modular from Armour (www.armourhe.co.uk), which directs the media to speakers or screens in other rooms. The media hub can also simultaneously route media to separate rooms.

Zone alone

In each room, or zone, ceiling speakers are mounted to allow for positional audio, if necessary, and to remove the trailing wires that regular speakers often create. Each speaker has an infrared receiver to allow control of the media hub

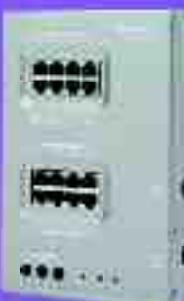
from every room. Alternatively, keypads can do the same job in rooms where a remote control would be impractical, like the bathroom.

The good news is that your PC could also be connected to the network. In theory it could even be used as the central point media hub if you have an enormous collection of movies and music.

We love the concept of a house filled to the brim with media and bristling with speakers, especially if it includes the home entertainment kit and PC that we've already bought, and hopefully this will be

considered standard and not just an option on the homes of the future. For those of you that are inspired by the concept of a technologically enabled home and are looking for some of the simpler functionality, the Devolo HomePlug system (www.devolo.com) allows you to turn your network of existing electrical cabling into an Ethernet, and the Philips Streamium (www.streamium.com) system

allows you to feed digital music files to client speaker sets around your home.



The Armour system's patching box.



6 Check the new slots to see if your PC's precious components will fit comfortably, and adjust if necessary.



7 Fix the ports into position, making sure the screws are short enough not to protrude through the top.



8 Small wooden cleats hold the drive into place, trapping the facia. Our table is nearly ready for multimedia action.



9 The drawer is simply 3 pieces of 19mm MDF screwed together with a 12mm base and a pine front.



10 Check that the drawer will still fit in the opening in the table, and carefully resize it if necessary.



11 Screw the drawer runners in place, and your PC-toting drawer is ready to go back inside the coffee table.

Workshop images Andy King



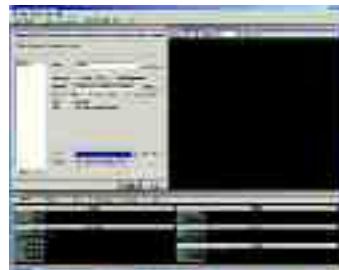
BATHROOM

The ultimate goal of entertainment fiends is to have their media available to them in every room of the house. PCFormat is a great advocate of portable media and, with a free tool from Microsoft and a wi-fi enabled PDA, that dream of watching your videos from the bathroom could indeed be a reality. *Windows Media Encoder 9 Series* allows you to stream content from a PC to your network, whether from a source, such as your TV card, or a playlist of video and audio files. This stream may then be picked up by either a computer in the network, if you have to go and work in another room, or better yet a PDA if you wander nomadically (or need a comfort break). Depending on your ambition and the size of your media collection, you could, in theory, create your own constantly streaming TV or music station and rule it with a Murdoch-like iron fist. *Windows Media Encoder* is relatively simple to set up, but extremely flexible so you'll be able to tweak it should you wish to venture beyond our tutorial. www.microsoft.com/windows/windowsmedia/9series/encoder

Project #3

Watch TV on the loo

According to conjecture, the average human spends three years of their life on the toilet. **Mike Channell** is not amused...



1 On loading *Media Player*, choose **Custom Session**, and **Session Properties** will appear on the Sources tab. We'll source from a file (though you can choose capture devices such as TV cards too), so browse for your video. You can add as many sources as you like, just make sure you select **Roll over to next source** on each to ensure the data stream doesn't stop halfway.

2 For the **Output** tab, select **Pull from encoder** and choose a memorable port number. Once the output is determined, select the **Compression** tab and pick a bitrate suitable for your network. 282Kbps should be just fine for streaming over wi-fi at a reasonable framerate, but feel free to experiment with quality and codecs (using the **Edit...**

button) depending on connection speed and your PDA's performance.

3 Once you have your sources, output and compression established, you can hit **Start Encoding** on the main toolbar to begin the stream. You should see a monitor window below the main preview screen. By clicking on the **Connections** tab in this window you will be able to see IP addresses for the stream (required for the next step) and which, if any, clients are connected to it.

4 Grab your PDA, ensure it is connected to the network and boot up *Windows Media Player Mobile*. Go to **Tools→Open URL** and type in one of the addresses that appeared in the connections monitor window on the streaming PC, `homepc:8080` for example. After a short period of buffering, wonderful sound and light should emanate from your device, heralding a permanent end to bowel movement-related boredom.



IMPROVE YOUR HOME WITH...

Streaming devices

D-Link DSM-320
£128

www.dlink.co.uk



Adding XviD and

QuickTime to the usual raft of audio and visual formats, the D-Link is fine looking and really rather well built, eschewing the networking-manufacturer-does-living-room-kit difficulties. No DivX but it's keenly priced.

Buffalo LinkTheater
£150

www.buffalotech.com



The display interface is average and set up can be troublesome, but the LinkTheater can't fail to impress. You get a DVD player, but its trump card is its support for HD versions of DivX and WMV.

Pinnacle ShowCenter 200
£165

www.pinnaclesys.com



Like all the kit here, 802.11g is the wireless flavour on offer. The ShowCenter might have had a refresh recently, but it's still looking a little long in the tooth. It is missing DivX but XviD is present and correct.

Xbox 360
£210

www.xbox.com



Despite queuing for hours, you probably haven't got one.

Naturally, we've seen one. But one-upmanship aside the media streaming is impressive – providing you've got a Windows Media Center PC.

Wired vs Wireless vs Powerline

Which will ultimately prevail this exciting networking-based three way dance?

If you want the fastest possible networking in your home, you're definitely best off stringing a mile of RJ45 Ethernet around the place. It won't be cheap, because you'll need a lot of kit – a big switch to ferry traffic around, a spool of wire, plugs and such – but when Ethernet is shifting data at Gigabit rates, it is faster by far than the other options. Dedicated cable is also best for future proofing, as the boffins behind the Internet2 network use 10 Gigabit kit to set long-distance speed records.

The only real issue with ethernet is the hassle. Power line networking neatly circumvents the need to add any more cables around the house, but while it offers the same sort of latency as Ethernet, it can't

nearly match the speed. Most only tally up to lazy old 802.11b (10Mbps), and even with the fastest gear, expect half the quoted 85Mbps. Power lines do reach through walls that wireless might not, though.

Wireless kit, particularly when presented as a pre-N device, sometimes makes claims of near-ethernet speeds. Much like the rates touted by power line networking, this are laboratory-based lies. Wi-fi is unlikely to perform nearly as quickly in practice. Environmental conditions make a real difference, and latency issues mean it isn't the quickest off the mark. But as the most flexible solution, crucially one which lets us spend more time on the sofa, we can't help but choose it as our favourite.



ATTIC

Project #4

Webcam astronomy

Stellar images from simple webcams?
James Carey wants the moon on a memory stick...

Proper CCD astronomy can cost you the earth. You can spend thousands on professional equipment. But causal backyard astronomers needn't think that digital imagery is beyond their grasp. Surprisingly, most bog-standard webcams are sensitive enough for deep space imaging, the hard part is actually fixing one to your telescope.

The key to good images is exposure time. The sky moves at a surprising pace when you start looking through a limited field of view so you'll need a motorised telescope mounting that can smoothly track an object. You can snap off quick shots but the results will always be inferior to a long, smooth exposure.

WEB SKY AT NIGHT

The next step will depend entirely on your configuration of webcam and telescope. Assuming you have a standard 1.25-inch

focus tube on your scope you will find many websites offer custom-made adapters for a range of webcams for around £25. (go to www.skyviewoptics.co.uk and search for "webcam"). If you can't find one to suit your setup you'll need to find a section of 1.25-inch pipe and carefully attach the webcam. If you have access you could lathe-turn a photographic film canister down to the right aperture. Either way, you'll have to be extremely accurate when centring the light sensor in the pipe.

The final step is processing the images you capture. As we mentioned early it's a good idea to blend several images together to create a composite final image. This works well for images of clusters and nebulae. You will also experience a fair amount of

background noise on your shots. In commercial CCD set-ups the light sensor is air-cooled as this helps to reduce the noise. You could achieve similar results by passing air over the sensor, perhaps by removing the PCB with the sensor on it from the webcam and placing it in a custom case with an old CPU fan.



Take stunning images of the heavens from the comfort of your home.

LIFE AFTER THE SKY FALLS

Give your PC cockroach-style

When all the power

stations explode, not only will they shower the countryside with glowing green goo, but they'll cease providing power for your PC kit. We certainly know which we'd class as the tragedy.

A roof-mounted solar panel might struggle, especially when faced with an overcast sky. Look for a panel that chuck's out a minimum of 32W, and consider using two or three if you want any quality guarantees. Check www.bullnet.co.uk – a 60W model is around £250.

Sunlight isn't the UK's most reliable resource, but there's plenty of wind to go around. There is a kit which combines wind and solar energy, along with a method of storing it. A 1KW setup, enough to keep a whole house running, should cost about £6,000 from rainbowtradingpost.co.uk.

Location photo Andy Short



The digital shed

Escape from it all in your dusty-yet-techy outdoor man-home

Armchair landscaping

Of course, the shed's true purpose is to store tools used to help your garden grow. The thing is, your PC is entirely suited to this – use the likes of Realtime Landscaping Photo (full version on last month's coverdisc) to redesign your scruffy allotment into something beautiful.

Analogue entertainment

Gentlemen's journals will help pass the time while you're torrenting the air blue between the house and the shed. An old chest of drawers like this can be had for pennies in a junk shop – or free, if you don't mind rooting round at the local dump!

Itsy bitsy

Small form-factor components are ideal for the shed. Our retiring gentleman has chosen the latest Shuttle case and matching monitor for his shed; that bright panel will send the Shelob-scale spiders scurrying back to the gloomy corners.

Shed seven

Audiophiles will never want to be far from their tunes, and this wireless speaker/music streamer from Saitek (reviewed on p.84) is just the ticket. With space as cramped as it is, they're handy as they can be moved around without wires pulling a rake onto your head.

Components

It's your man-space – so keep your components, in whatever level of abject disarray that pleases you most, without fear of reprisal from The Matriarchy. Never know when you might want to swap in a new 3D card, or when that broken Molex plug might come in handy...

High-gain wireless antenna

When your wireless network's inside the house, you'll be lucky to get a signal at the end of the garden. That's when a big antenna is useful. This Asus WL-ANT150 Omni High Gain Antenna has the range of a football field.

Tooled up

Ahh... the comforting earth-and-metal smell of garden tools. Few odours are as evocative to the male mind, and they're also handy for bursting out of the shed and beating off pesky kids who kick their ball over your fence. Bet they weren't expecting that, the tykes.





Project #5

Home security

Dan Graham explains how you can make your house a star of CCTV, perfect for catching those unwelcome visitors...

So, you've got a webcam. It didn't cost you much, and you only use it occasionally, for basic video nattering over MSN. Apart from that, it's gathering dust faster than a champion Sumo wrestler's exercise bike. Did you hear about the Camden-based student who caught a scummy thief using a camera cunningly placed in his digs last November? Although it's unlikely a camera will prevent a trespass, using a webcam to keep an eye out when you're not there can be useful. You might live in a shared house where a housemate keeps on nicking your CDs or perhaps you just want to keep an eye on your study while you're at work and the kids are at home. Whatever, the use of webcams for security purposes is rocketing and we'll see a lot more kit sold under this premise during the next year.

CAST THE NET

Most webcams are USB of course, but IP network cameras are also becoming more popular and can even be wireless, too (see below). Other cams have technologies such



Finally, the perfect foil for the notorious PCFormat coffee thief.

as face tracking so the camera will follow the shape of your face, while others pan and tilt automatically. Despite being around for a couple of years, such technology is still imperfect. If you don't have a webcam already, it may be worth spending more to get a camera that face tracks, but, at around the £40 mark, these are double the price of their static brethren. If connecting a camera via USB, bear in mind that the maximum cable length is 5m before signal degradation sets in, unless you add a powered hub into the equation. IP cameras are, of course, network devices, so can be made wireless in the same way as your Xbox or network hard drive.

Guard your gaff

Use our disc and guide to setting up



1 Dust off your webcam first; if you don't do that, you won't be able to see anything. You'll almost certainly have lost the driver disc that came with it, so download them from the manufacturer's website. You'll probably be forced to install some of the proprietary bloatware rubbish that pervades most webcam software these days, unfortunately.



2 Once Windows has recognised your camera, it'll be shown as a device in the Control Panel under Scanners and Cameras. If your camera installed its own software, you can do some fine-tuning. For example, our Logitech QuickCam 4000 installed the *Logitech Camera Control* applet. This gives us control over every aspect of our camera.

On pane of death
The main window shows what the camera is seeing at the moment – this pane remains constant even if you click on different tabs on the right.

Incriminating evidence
The collected images are displayed here – these can be at pre-defined intervals, or motion dependent. It's up to you to choose!



Secure network

Serious about home security? Attach an IP camera to your network



See, there's one inherent problem with the webcam; you need your PC to be constantly on. And despite being thick as two short planks, it won't be long before a trespasser wises up to this rather obvious fact. Still there's a type of camera that's more of a networking device. IP cameras sit on your network and can be accessed from any PC with the right service, even online. Essentially, they appear similar to a webcam, but are far more complex. Many of the cameras, available at www.ipcameras.co.uk/

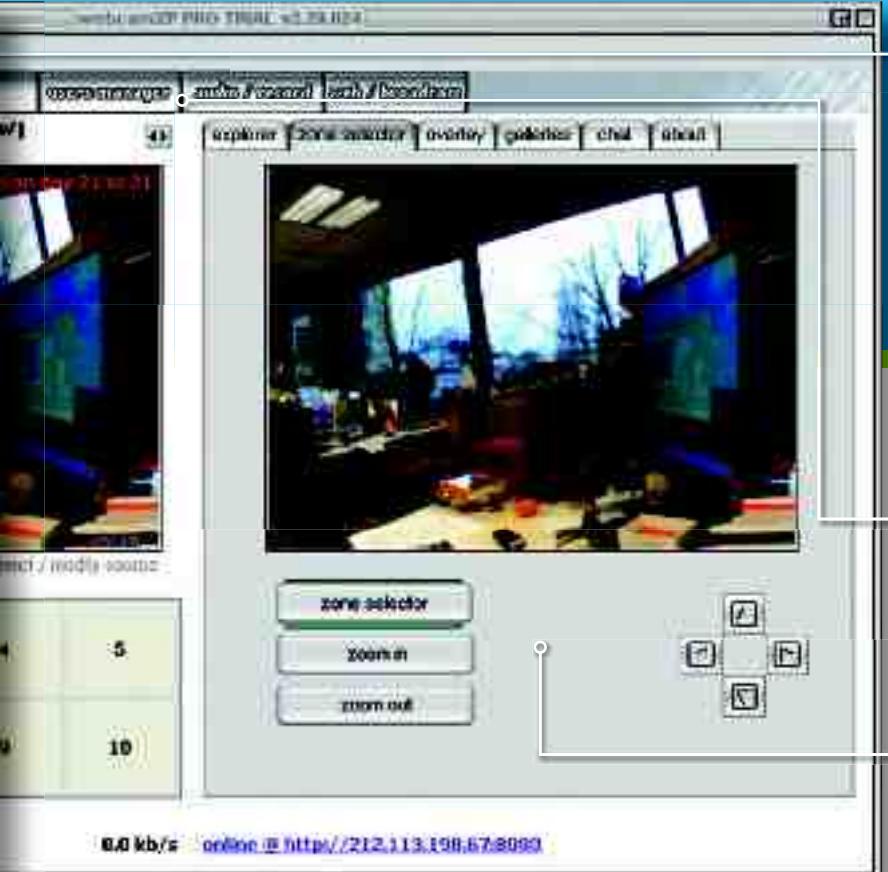
ipcameras.php will pan and tilt, controlled remotely when you log in. What's more, we've seen a trend develop recently. It's no longer specialist companies such as Axis (www.axis.com) making them, but big names such as Panasonic and Sony and established networking bogs like Linksys. These guys don't tend to bother unless there's a future for the technology. The home network is the next bastion of home security. Unless the scallywags unplug your router, that is.



3 There's a demo of WebcamXP on your PCFormat disc but there are plenty of apps around – WebcamXP costs \$40 to register and it's not alone. Watcher (www.digi-watcher.com) is a similar trial application. Surveillance Scan II is a free app available from biphome.spray.se/baxtrom/sscanii.htm – it's simplistic in use, but may be all you need.



4 All the apps we've recommended are watcher apps; they can detect movement in your webcam's vision and take a grab of what the webcam sees. In most apps you can alter the sensitivity of this so that you don't end up with 96 grabs of the cat. Webcam XP is undoubtedly one of the most comprehensive we've seen, not least as it can also record sound.

**Serving a sentence**

The Options tab enables you to specify details such as FTP server and the sensitivity of your camera – it's best to fiddle with this so that you achieve the best results.

Home taping

These final tabs enable you to choose whether the camera is broadcasting over the web or not, as well as whether you want to record sound from an attached microphone.

Forensic function

This pane enables you to select a specific part of what the camera sees to zoom in on. Most webcams don't have zoom functionality of course. Remember though, that image quality will suffer.

IMPROVE YOUR HOME WITH...
budget webcams

Logitech QuickCam Messenger**£25**www.logitech.com

This disembodied spherical eye converts for both desktops and laptops, and it scores usefulness points with its built-in microphone.

Creative Live! Ultra**£50**www.creative.com

Designed for notebooks, this comes out high in the picture stakes. There's a wide-angle lens, which is unusual, but pricey.

Hercules Webcam Classic**£17**europe.hercules.com

The picture and design are strong, and it has a base for both laptops and desktops. Built-in LEDs pick you out in the dark.

Trust 360 Spacecam**£19**www.trust.com

It twists around, making it handy for security, but there's little else of note. Cheap, with acceptable picture quality.

Intelligent living

There's a lot of interest in the concept of a smart home and some big names are getting involved

Orange-at-Home

The Orange smart home (pictured) was as much an academic experiment as it was a demonstration of new technology. Real families moved into the house in Hatfield, Hertfordshire, and were studied by the University of Surrey's Digital World Research Centre. It included the usual smart features, including fridges which re-order their contents via the internet and voice-activated lights. The project's findings were included in a book called *Inside the Smart Home* by Richard Harper, which analyses the more serious implications of technological domesticity.

Microsoft Life Squared

Located just off the Kings Road in London, Microsoft's Life Squared is all about existing products in a smart home situation – more where do you want to go today than tomorrow. The experience is a scripted tour delivered by actors. The fictional owner of Marsh Marine, Rick Marsh extols the virtues of using Microsoft Office and OneNote to wirelessly run his business. Then Rick's wife, Jenny, shows off Windows XP Media Center Edition on a gargantuan screen. The kids are kept in check using Microsoft's Optical Desktop Elite with Fingerprint reader – as if that was enough to control techno tearaways.

Philips HomeLab

In the Dutch city of Eindhoven, the futuristic Philips HomeLab revolves around 'ambient intelligence'. It responds to human presence in a vision of interconnectivity where devices all interact sympathetically. The Living Light project adjusts lighting to suit the image onscreen. The Sensechair has built-in medical sensors. Electronic and Photonic Textiles enable cushions with built-in LED displays, so SMS messages could appear right next to your head. Don't forget the pets; iCat and Smart Companion, aka 'Dimi'. A real dog may be able to fetch the paper, but a robot cat could control your whole entertainment system.



5 Setting up Surveillance Scan II is the most basic way to turn a webcam into a security device; it won't upload pictures to an FTP server, but it will save a bunch of pictures to your hard drive. You can alter the interval pictures are taken and the sensitivity. So it's best for simple applications like proving that your kids have been raiding the biscuit tin.



6 The comprehensive WebcamXP is more useful for security. As well as a simple motion detector tool, it offers you the option to stream video to some webspace if you have it. You can also upload stills to an FTP folder or your hard drive. A wizard will help you set up the streaming when you first launch the app, and everything is configurable using the Options tab.



7 Should you have some webspace of your own – even if it's just the free space from your ISP – you can set up your own still image webcam without the expense of buying extra software. You'll need to create a page your cam can upload to; webcam page scripts are available on the web from developers.webcamworld.com/template3_cd.html.



8 In the same directory as where the images from your webcam are kept, you'll also have to put two files – JavaCam.class and JavaCam.java. Now, using the evaluation version of Webcam32 (www.webcam32.com), point your webcam at your space; specify your FTP server – normally [ftp://yourwebspace.com](http://yourwebspace.com) or similar – and your username and password. **PCP**



Dare to date

They never write, call, or even look at your profile. Online dating can be tough, but **Chrissy Williams** has the female perspective

My best friend is dating someone he met on *Warcraft*. Seriously. And I don't mean just in the game. I mean in person, with the kissing and the cohabitation and everything. But what if you spend what your mother would call 'too much' time playing computer games, you have VHS copies of the original *Star Wars* films you can't bear to tape over, and – for some reason – you can't get a date? Even worse, you're a girl. Or rather: I'm a girl. I'm a girl who's at least vaguely into games, in the midst of what is meant to be a male-dominated social grouping, and I can't get a date for love nor money, especially not love.

That's when the thought occurs: I've been doing this all wrong. I've been taking my mother's advice and looking at things the old way. If I can't date in reality, I should be hitting the internet for satisfaction.

There are, of course, many ways to achieve that using the internet, but the obvious ones are

not that great if you want an actual human being to cuddle up with of an evening. Plus, imagine the abject horror and embarrassment I'd feel if someone else were to get their hands on my precious hard drive – "what a lovely girl she used to be" says my former poetry teacher.

"If you're 35, but your profile picture makes you look 67, you might want to have a rethink"

There are plenty of wholesome dating sites, though, and all of them feature a male to female member ratio that should work in my favour. If you're ever tempted to use one, here's my experiences to bear in mind.

GOING LOCAL

It seems that size does matter, after all. Boasting over three million members, a big site like www.datingdirect.com is a good place to start. You can put up a profile and

search its database for free, although it does charge you to contact other members. This turns out not to be a problem though, as just a cursory glance through the members within my postcode reveals that all the women and the men have perms. Because, of

as possible – just take your time and find a picture that makes you look at least halfway decent. Girls rarely go for "intriguingly eccentric" – I think we mostly just want to know what face we're going to be looking at the morning after. We may be desperate but – as the saying goes – even beggars can be choosers sometimes.

PERMISSION TO RANT?

Something else about profiles: when a generic template asks you what you what your interests are and all you say is "reading and watching films", you're really not going to get very far. For all I know you're just reading headlines in *The Sun* and watching films that are shown in the Conservative Club every Sunday. We're talking detail, people. Now, I know the fear, don't get me wrong – what if I admit to still enjoying *Airplane* when my ideal man actually loathes that film with a passion and has killed at least two people in the past for arguing



Picture © Cameron Law

its merits? Well, get over it. I've read through countless generic profiles all saying the same damn thing: films and music, music and walking, walking and breathing. Well – newsflash – we all walk and breathe, if only to speed our way to the toilet after reading an awful profile on some random dating site.

Let's just say that the obvious avenues of approach have been nullified to the point of nausea (not metaphorical). No, I didn't contact anyone on a big faceless site. I

didn't even bother completing my profile. I can't escape the notion that these sites are populated by the unattractive sadsacks that you've probably sat next to on the bus thinking "dear God, please don't get off at my stop." Where are the guys that care about an interrupted electrical power supply because it might interfere with a download. Oh, they're crying over spilt broadband...

So if I'm going to find the kind of guys I can actually relate to at all, I need to go somewhere more

And the boys say...

Nick Lessing tells us about his experiences with online dating



What site did you choose and why?

Well, to be honest I was quite lazy about the whole thing. I hadn't gone out with anyone for a little

while and thought I'd give it a go. After looking at a couple at random websites I decided on www.udate.com. It seemed quite expensive but also pretty big.

How did filling in the profile go? Was it easy?

Fine, actually. It did take me two sittings to fill in the whole thing though.

I had to come back to the wordy bits, which was quite irritating.

What happened after you put your profile up?

Well, I sent 10 or so messages to girls via the site's inline email system and got a couple of responses back, but they petered out after we'd swapped a few emails. I hadn't put my photo up at first, but after I did I got some messages from girls who'd seen it.

So, did you meet up with anyone interesting?

Well, after about a week of emailing one of the girls who contacted me, we swapped proper IM names and after

specific. No trashy generic dating sites: somewhere more reputable, which actually encourages literacy as a positive character trait. As much as I hate to admit it, I'm going to try for the logo. I've heard good things about both Yahoo! (uk.personals.yahoo.com) and Channel 4 Dating (www.channel4.com). A friend of mine in London got a bunch of dates lined up after just a week of posting his profile on Yahoo!, but there are two problems. The first is the sheer level of detail Yahoo! wants from your profile and searches. Did you know that you can enter your TV watching habits as "couch potato" or even "Digital TV is my best friend"? Really. Check it out. The second, more pressing problem is that if you do happen to find a good match, Yahoo! then tries to charge you £19.95 for the privilege of following it up. That applies to IM contact too. Grrr... I can only guess at what category of single women I fall into, but I really hope it doesn't extend as far as having to pay hard-earned money to Yahoo! just to get a quick IM behind the bike sheds.

STUPID CUPID

But wait – what's this? A friend has directed me to OKCupid (www.okcupid.com). Now, I'm not condoning it completely (it's the same internet show-off breed as Friendster, only less pretentious and more blatant and wanton) but I have to admit that the graphics and the look of it instantly appeal to me. It's cartoony, modern, and when you log out it bids you farewell with the message "OK, adios. See, the internet isn't that bad". There's something familiarly geeky about this that I rather like. The first thing

DATING SITES TO TRY

Single and sick of it? That special someone could be online...

» www.okcupid.com

A matching system with questions and tests designed and written by the users themselves, uncanny personality analysis and a disregard for profit.

Total number of UK users 27,057

Claimed proportion of users male/female 53/47

Prices involved Free!

» www.datingagency.com

Sizeable, worldwide dating service with branches local to you, free searching and some smashing-looking photos.

Total number of UK users 800,000

Male/female 60/40

Prices involved £18 a month, £40 3 months, £60 for six months, £70 a year, £99 (offer at the moment £74) for the Love Guarantee.

» www.match.com

Offering free winks to send to attractive members, this site is over 10 years old and claims to be the world's biggest online dating service.

Total number of UK users 1.4 million

Male/female 50/50

Prices involved One month is £24.95, Three months is £16.65 a month and six months is £11.66 a month. If you don't find someone within six months, you get six more free.

» www.loopylove.com

Every demographic is covered due to the sheer simplicity of the site. No frills. Common as muck and as unassuming as you can get.

Total number UK users just under 1,000,000

Male/female 53/47

Prices involved Weekly £4.99, Monthly £13.99, Annually £59.99.

» www.gorgeousnetworks.com

Much for the discerning, nay picky, dater, your profile and photo need to be voted on to the site by existing members. This elite site and lifestyle club also runs its own events.

Total number of UK users 1,000

Male/female 48/52

Prices involved £250 membership fee



The discerning singleton's choice.

I have to do, as with all the other sites, is make my own profile. But, instead of asking me what my hobbies, weight and TV preferences are, it asks me things like what my "six things I couldn't live without" are, which is rather fun.

Next you have to answer a whole bunch of questions. "What a pain in the flesh-cushion," you might be forgiven for thinking. It's actually rather entertaining. About 50 questions gets you into the "we have an OK understanding of you" category but, trust me, you're going to love answering every one of them: everything from "Are you annoyed by people who are superlogical?" to "Should evolution and creationism be taught side by side in public schools?" And the best thing is that it's all free. The only bad thing about it is the constant banner ad at the top of each page for www.sexsearch.com, the slogan for which seems to be "Find tons of sex partners in Rochdale". Well, then again, if things get that desperate I guess it's always good to know I have options...

ANOTHER ANGLE

Before you know it, I'm getting a bunch of emails, if not "woos" (a poor excuse for people too scared or illiterate to email – don't worry, you can disable the woo thing if you want to) from all manner of people all across the world, as well as the odd tasty looking person who lives fairly locally. To be honest, the results have been mixed. For example, one opening message was very complimentary – the guy seemed to have actually read my profile for starters – and he said that he thought my eyes were very

pretty and that I should check out his profile and message him back if I felt like it. Ordinarily, this would score quite well, were it not for that fact that his screename was Truncheon69. Come on guys. At least try to hide it a little... Then there was another guy who actually seemed pretty nice from his profile, but he signed off his first email to me by saying: "We'll start with shallow and move on to deep, Your Loyal Servant." Call me crazy but I tend to avoid the ones that sound like potential stalkers from first contact. I mentioned a certain film on my profile (it wasn't *Airplane* but it was in the ball park) and one

great first Instant Messenger date conversation about superheroes, of all things. There was a nice mix of sarcasm and self-deprecation, with a reassuringly fair amount of care given to spelling. He doesn't live too far away and we've arranged to meet up. I think this is the key, to be honest, because no amount of chatting in lust and polygons is going to be a replacement for the real thing.

IN THE FLESH

I am a little tentative, but I hope it's going to be OK. We're doing all the right things – public place and all that sensible stuff – and I think it'll

"The only half-decent way to find out if you're compatible is to talk to them. That means IM"

chap emailed me saying that he'd love to do certain things to me whilst watching it, just so long as I didn't mind him reciting lines to me in the middle of it. Well, frankly, that's just the sort of behaviour I really do mind (why ruin a good movie?), so he was out too.

Thing is, for all the messages and emails and to-ings and fro-ings, the only half-decent way to find out if you're compatible with someone is to actually talk to them. In online terms, that means IM. Probably the nicest way I ever got invited on an 'IM Date' was like this: someone emailed me quite briefly saying he liked my profile, would love to chat with me, mentioned what IM programs he uses, and that I should mail back if I wanted his handle. I did, we got chatting, and had a

be fine. As I said earlier, one of my friends is indeed going out with someone he met while playing *World of Warcraft*, and they've been together in the flesh for almost a year. While I haven't pried excessively, I believe all the usual benefits of coupledom are no different because the relationship was born electronically. There is no shame in flirting with people whether you're in a crowded bar, at a rain-lashed bus stop or even in the Auction House in Ironforge. I guess the whole point of all this is: you never quite know what's going to happen, or who you're going to bump into. Remember to smile at all the goblins you meet in the street. You never know – one of them might even turn out to be a charismatic dwarf in disguise. PCF

IM DOS & DON'TS

How to ensure a chat with a would-be suitor goes swimmingly

DON'T

- » Choose the wrong sign-in. (For example, *xxxHornetLadxxx* is very, very bad).
- » Talk about other people you've seen on the site, especially not in a comparative way.
- » Launch into 'manly bawdy showoff mode' (if you have one, that is). It won't work.
- » Suggest meeting up after the first IM date. It's simply too soon. If they're local, wait at least five chats. If she's not, forget about it.
- » Get pedantic about your DVD or CD collection over IM – save that delight for the meeting in person.
- » Act like a stalker – even if you notice them come online, don't leap straight into conversation. Give it a little while and you'll keep some dignity.

DO

- » Talk openly about how the online dating thing feels to you. They're probably slightly tentative too.
- » Ask lots of questions and FOR GOD'S SAKE try to remember at least some of the answers.
- » Make yourself a little vulnerable and/or sensitive. Just so long as you're not using any weeping emoticons in the process.
- » Be yourself – if you try to second-guess them from their profile it's unlikely to work. Remember – profiles are for posturing. The chatting is where you start to get a better idea of who that person is.

- » Eventually, suggest meeting up. Online flirting is all well and good, but you really need to see the person in the flesh to work out if you find any of that flesh particularly attractive.

If you've got decidedly dodgy musical taste, don't mention it in your IM date.

Protecting yourself if it goes wrong

Because nothing says 'I love you' like a masked IP address

So, you think you've met the man or woman of your dreams online, and then you discover that he's a 55 year-old postman called Frank, with his own chainsaw. Fortunately, there are a few steps you can take to ensure that if this nightmare scenario happens to you, you won't lose any limbs.

The oldest way to render your internet usage untraceable is the anonymous proxy. A proxy server is a service that makes indirect requests to other network services on your behalf, passing you back the results and keeping your actual IP address secret from the person at the other end.

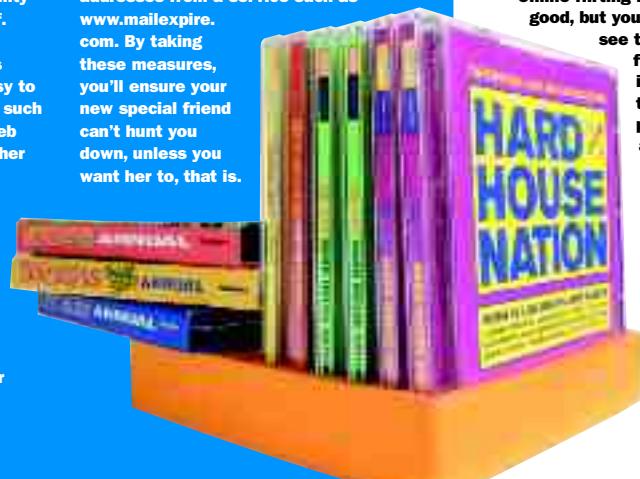
Using one of these proxies will make it extremely difficult for people to track you down by monitoring your web usage. A useful list of anonymous

proxies can be found online at directory.google.com.

A newer solution to the anonymity problem can be found at Tor (tor.eff.org), a project sponsored by the Electronic Frontier Foundation. Tor's sophisticated protocol makes it easy to render all outbound network traffic such as Instant Messaging, e-mail and web surfing completely anonymous. Rather than a centralised proxy, Tor communications are routed randomly around a distributed network of so-called 'onion routers'. The more people who download and run Tor, the more secure the network becomes.

Finally, whatever you do, make sure that your weapon-wielding potential beau doesn't find out your

main e-mail address, by using a service that provides random, time-limited email addresses from a service such as www.mailexpire.com. By taking these measures, you'll ensure your new special friend can't hunt you down, unless you want her to, that is.





A story of MMO success

John Walker and Rhianna Pratchett talk to the team at NCSoft, Korea's Massively Multiplayer kingpins, with designs on expanding their empire

You probably know that MMOs are big in Korea already. A brief jaunt around the web will unearth a staggering mass of unheard-of anime fantasy worlds, instanced multiplayer battleship simulations and MMOBSFGs, or Massively Multiplayer BroomStick Flying Games. As a genre, the MMO is notoriously hard to crack. It's hard to get started, hard to keep subscribers playing and paying and hard to get right. NCSoft is one

company riding a wave of success, bringing its knowledge of the Korean MMO market to the UK, gaining success in the West with a string of hits like *Guild Wars*, *City of Heroes* and *City of Villains*. NCSoft hopes that these games and its two new MMOs (*Auto Assault* and *Tabula Rasa*) will do as well here as *Lineage II* did back East. We chatted to a few senior NCSoft producers about their past successes and future plans.

Causing Havok

Real physics in an MMO? You betcha

Possibly the bravest technical idea in *Auto Assault* is the addition of the Havok 2 physics engine in a multiplayer universe. But of course, in an all-action vehicle-based game, it's absolutely necessary. Not only will this allow for realistic driving effects, including jumps and skids, it has given the developer the freedom to create a destructible world for you to crash through. Buildings, pylons and other scenery can be demolished on impact (to reappear a few minutes later, obviously, so the next person can break them).



Auto Assault will take advantage of Havok by including enormous ramps.



Auto Assault

As our resident mutant, John Walker was the only man qualified to explore NCSoft's post apocalyptic MMO

Developer NetDevil Web eu.autoassault.com Due Spring

The joy of the MMO is that it's still new. Unlike so many other familiar genres, where their window is closed and painted shut, the online multiplayer is still discovering itself, exploring its potential, and trying out new tricks. No company stretches this further than NCSoft. *City of Heroes* and *City of Villains* offered an immediate, believable, instantly playable world; *Guild Wars* broke the pay-to-play mould, as well as radically reshaping traditional levelling structures, and now NetDevil's *Auto Assault* is set to ignore pretty much every MMO standard in order that its high-velocity arcade action can appeal to yet another untapped horde of gamers.

"We're potentially making something that's even more casual than anything else out there,"

NetDevil's Design Director Ryan Seabury told PCF. "It's still difficult for a casual gamer, a genuine non-gaming fanatic, to level cap, or reach the end-game of current MMOs. More people should be able to get there."

Auto Assault aims to strip away many of the factors that put people



"There's an entire system of medals rewarding anything that makes the game more fun. If we find people are doing it, we'll award medals for it"

RYAN SEABURY Design Director on *Auto Assault*

off massive online gaming. You can comfortably play all the content as a single player, tackling things in groups is never necessary. Mission details highlight the key info to save

reading through blurb for those who just want to race around. And you're impressively powerful from the off, so you don't have to wait for aeons to reach the fun stuff.

There's been an apocalypse, you see, brought on by a peculiar barrage of meteors. Once humans ruled the planet, but now, in the

Seabury, "but we hope they'll play through again as another of the three races, with their different storyline, let alone a different character class, and realise how much there is on offer."

The motivations to play through again are multifarious. The focus is on augmentation, or as we believe

toxic, radioactive wastelands that remain, three factions battle for power. Humans, Mutants and Biomeks contest the lands, bitter enemies, each fighting for survival... in cars!

MMO MELTDOWN

Auto Assault's intent to focus on a singleplayer experience in a multiplayer environment strips away any notion of the traditional elf-clad second life; it chooses to focus on this to let you drive heavily modified cars, really fast, blowing stuff up.

Each of the three factions has their own specific storyline, with specific core missions to be taken on as you progress, as well as numerous side quests to be discovered through extended exploration. The intention, however, is not to have this be the only reason to play. "I think there will be some masochistic hardcore people who will be disappointed that it can be capped so quickly," says

the young people call it, 'pimpin' one's ride'. Taking a *Diablo* philosophy to drops, scavenging for items in the bereft world will reward the player with infinite variations on the customisable tech. Known as 'Crafting', the process involves improvising with the objects you find out in the field.

"The extreme example would be, you find, say, the 'Cool Uber-Gun of Doom', which might have great stats," Seabury notes. "You could reverse engineer it into a broken item, then add different materials to change its capabilities, and then when you craft it you might memorise it so you could make multiple versions and sell it to other people. Or you could even reverse engineer that, and make further, more elaborate items."

Additionally aiming to keep people playing long beyond the end of the current tale, there's a reward system, aimed to encourage deeper exploration, and potentially more



Blowing up cars is always fun. And that's what this game is all about!



exciting, imaginative play. "There's an entire system of medals awarded based on doing certain things – catching five seconds of air-time on a jump, for example – anything that ends up making the game more fun. If we find out people are doing it, we'll award medals for that."

Seabury adds: "It won't be entirely focused on extremes – as with NetDevil's previous MMO, *Jumpgate*, players will be recognised and rewarded for demonstrating well-rounded and balanced skills."

As well as a unique storyline for the three factions, they also have unique skillsets. Each has access to abilities that the other two sides will not, ensuring that the way you approach the game will be significantly different on repeated plays – something that can't be

said for all MMOs. Of course, there's also a hefty multiplayer side, most especially in the PvP arenas, and 'contested highways', where players from opposing factions can make glorious battle with their souped-up vehicles. "Arena entry can also be played from level one," notes Seabury. "There's no need to have reached a certain point before you can battle against rivals."

There's also no need to worry about penalties for dying, travelling long distances (airlifts conveniently dump you and your vehicle wherever you want to be), and no boring fuss when levelling. *Auto Assault* will hopefully be a concerted and deliberate effort to expand the MMO horizon even further, welcoming adrenaline junkies to the online world.



The Mutants will have more organic environs than the metallic Biomeks.



The Biomeks have probably watched *Tron* more times than is healthy.

Tabula Rasa

Skin-tight outfits and abnormally large insects? It must be the future. Rhianna Pratchett gets out the baby-oil and an industrial size can of RAID

Developer Destination Games **Web** www.playtr.com **Due** Autumn



Despite the success of the behemoth-like *World of Warcraft*, and the respectably bloated *EverQuest II*, a shift in the world of MMOs has been gathering pace. Fantasy is being swept aside as sci-fi and post-apocalyptic settings are embraced. Less "Lo, to the castle sires!" and more "Lo, to the matter transfer device."

EVE and *Anarchy Online* have already paved the way, but there's a new wave a-comin'. Most recently it's been *Auto Assault*, but we also have the upcoming *Twilight War* and *Face of Mankind*. Perhaps the most

indicative sign of this shift has come from developers with a traditional fantasy background; hitting our PCs this autumn is *Tabula Rasa*, which hails from the man behind *Ultima*, Richard 'Lord British' Garriott and his studio, Destination Games.

ULTIMA WARRIOR

Tabula Rasa, or 'blank slate', is set in our distant future. Although not so distant that we haven't forgotten how to make armour look sexy or

may be an RPG, but it borrows a lot from both third and first-person shooters. "We started out as pretty much a straight role-playing game," explains Starr Long, producer at NCSOFT. "A lot of us play shooters like *Battlefield* and *Medal of Honor*. We really liked the pace and the feel of those types of games. One of the things we noticed was that, other than *PlanetSide* and *WW2 Online*, there wasn't anyone trying to do a



"A lot of us play shooters like *Battlefield* and *Medal of Honor*. We really liked the pace of those games"

STARR LONG Producer on *Tabula Rasa*

allowed evolution to bypass the standard human form. Poor old Earth has been overrun by insectoids known as the Bane, and the survivors are holed up on an outlying planet. Thankfully, some friendly, mysterious alien types have given us weapons and access to a pseudo-magical power known as 'Logos' – now it's time to fight back.

And it's this fighting that forms the meat of the game; *Tabula Rasa*

shooter online game. So we created the front end, the pace and some of the game mechanics of a shooter where you cycle through weapons and you have a cross hair all the time. When you're shooting, your position, cover and whether you're moving affects the damage you are able to inflict."

Long is keen to emphasise that *Tabula Rasa* still has the core of an RPG and this approach is hopefully

Power and influence

Starr Long reveals some of the things that influenced *Tabula Rasa*

"The Fifth Element was a big influence, especially when it came to designing some of the weapons and the overall look of the game. Certainly Starship Troopers influenced us for some of the battle scenes and, of course, things like Star Wars. I personally drew a lot of influence from sci-fi novels. I'm a really voracious science fiction reader, and I think it paid off. I particularly like the works of the sci-fi novelist Peter F. Hamilton, such as *Fallen Dragon*, *The Reality Dysfunction* and *The Neutronium Alchemist*. In *Fallen Dragon* there are chapters that read just like an MMO, I used to photocopy them and give them out to the team and say 'There! That's what an MMO should be like!' – although we didn't steal anything!"

Dressed to kill

Getting the clothing right in an MMO is a fraught with difficulty

If you think you've heard about *Tabula Rasa* ages ago, then you're probably right since it's been in development for quite a while. However, the game has gone through a fairly major redesign since it was originally conceived. This was largely due to the (literally) original design of the characters' weapons and clothing. "Originally we had a rather wacky design for the visuals," explains Long. "The weapons and costumes were a mishmash of sci-fi, fantasy and anime. You'd have things like techno harps and elegant

Art Nouveau costumes. The problem was that some people got it straight away and were really into it, but they were the minority."

Unfortunately, although the team found that the costumes worked well for the female avatars, they made the male ones look rather too effeminate, which didn't sit too well with players. Consequently, the game's visuals went back to the drawing board and came back less Rivendell elf and more Cyberdog babe.

one that will attract the usual crowd, while encouraging the first-person shooter fans to dabble in the world of MMOs. "It's still an RPG at heart," continues Long. "You still build your character over time and

this has an impact on how much damage you do and how accurate you're going to be". Long himself worked on the *Ultima* games alongside Garriott and believes that they learned many lessons from their experiences, especially from *Ultima Online*. "One of the big ones was making sure that people were entertained the whole time they were playing and there wasn't a lot of down time. We would brag that in *UO* it would take hours to walk from one end of the map to another and didn't realise that most people have to walk a lot in real life, so they don't want to do it in a game!"

Destination is seeking to give the game a lot of pace, by including lots of instancing gameplay, interspersed with large

persistent battlefields. Although the gameplay is, at the moment, entirely Player versus Environment, a lot of work has been put into the AI of the Bane. They will often have their own agenda and will fight with both ruthlessness and strategy to achieve. Long continues: "No one has really tried to make a game that really felt like there was a real war going on. We wanted to get that chaotic, dynamic feel of a shooter where there are waves of NPC soldiers sweeping across the field, artillery strikes coming down and drop ships flying in with reinforcements all the time. We hope that feeling will be unique." **PCF**



She's a brave girl. Wearing white trousers and facing a beast like that.

The changing face of RPGs

AreaNet's founder and project lead on *Guild Wars*, Jeff Strain, tells us about his philosophy of MMOs

» **PCF** *Guild Wars* appears to take a philosophy from single player gaming that says players should not be punished for being new, but rewarded for getting better.



Jeff Strain Our goal was to bring the single player offline experience into the MMO realm. With an offline RPG, you're the hero – the quests you can undertake are telling an epic story and things are changing as you play through the game. With traditional MMOs that's not what happens because the world needs to exist in a steady state. By using the instancing model, and by adding a lot of sophisticated technology that compares the quest log and the experience of all the party members who are playing together, we're able to dynamically populate each mission, so what you're experiencing reflects what you've done in the past, so you're actually changing the world.

» **PCF** Can you see an MMO allowing a singular persistent world that dynamically changes for all the players within?

JS The fundamental problem you're dealing with the economy of heroes. It's very out of place in an MMO. You don't want real life. You want to be the hero. You want to be special. A lot of the design of MMOs is finding ways to make it interesting, challenging and fun for people in a world where every single person you talk to is as much a hero as you are. I think the problem with a truly mutable persistent world is who gets to change it?

» **PCF** Is this the way you see MMO working forever?

JS No. I think that one of the things we've tried to do with *GW* is push the boundaries, do something different, but that doesn't mean that we think what we've done is the end-all-be-all for games. What I hope is that other people look at the game and say, "Hey, we don't have to make the same game year after year after year with updated graphics. We can actually challenge some of the fundamental notions of RPG design that have been around for ever. And we can be successful with that."

reviews

All the latest games, gear and apps



TOCA Race Driver 3

Our scoring system

- 0-19% Unusable or astoundingly rubbish
- 20-49% Largely not worth spending money on
- 50-69% Some decent features but uninspiring
- 70-79% Accomplished without the must-have factor
- 80-89% Outstanding. Awarded Top Gear or High Score
- 90+ Exceptional. A PCFormat Gold Award winner

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It's a misconception that only 90%+ is an essential purchase. Anything scoring 80% or higher is festooned with one of these, making it one of the month's most highly recommended.

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We are PC fans writing for PC fans, so please share your thoughts on new stuff in our forum: <http://forum.pcformat.co.uk>



Zen Vision M

PCFormat Experts



KIERON GILLEN
The writer of the third worst review of 2005, according to somethingawful.com. It wasn't for us, we assure you.



JOHN WALKER
Tired of sticking it to the man, John relaxed this month by casting off and drifting away with *Virtual Skipper 4*.



RICHARD COBBET
Held a 40 minute stand-up IM argument with Games Ed James about the merits of *Bloodrayne 2*.



ALAN DEXTER
Was sick on a bus, a wall, a colleague, and worst of all, himself – all in one short evening. This man is a father, you know.



DAVE JAMES
He may look happy, but poor DJ spent New Year's Eve alone, save for a duvet and a nasty case of the raging phlegm.



MIKE CHANNEL
The World's Keenest Man™ talked everyone's ear off until we let him pen this month's lead game review.

MOST WANTED
Bioshock

MOST WANTED
A nice lie-down

MOST WANTED
iPod video

MOST WANTED
AMD FX-60

MOST WANTED
USB antibodies

MOST WANTED
TOCA Race Driver 4

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THIS MONTH



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Eve Online



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Laptop RAM



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» CORE DUO Intel's mobile beast

Don't know your Merons from your Dothans? Well, Yonah's here to add to your confusion. Fear not though, our resident technical wizard Jeremy Laird takes you gently by the hand and leads you through Intel's new CPU road map. But will the first ever mobile dual core processor live up to its billing as the future of laptops?



82

» MFD ROUND-UP Clever printers assessed

Printers which merely produce hard copies of your boring old text documents have been on the way out for some time, so we thought it precent to shove five of the latest and greatest multi-function devices into a room, lock the door and let them battle it out to see which one's best at scanning, printing and copying. Dare you venture forth to an MFD retailer without knowing the results? We thought not.



90

» WEB HOSTING Gotta have more space?

In the future we'll all have masses of web space from the moment we're born, with terabytes of monthly traffic and eternal technical support. For free. Until then we need to do the hard work and find a web host ourselves. Our round-up of the best of the world of hosting has to offer will guide you around the perils and pitfalls.



100

» REAL WORLD GOLF We love a crazy peripheral

What this world needs is a way to play golf at home on your computer while also improving your swing. It just so happens that is exactly what was wheeled into *PCFormat*'s office this month. Strapped up like a Jim Henson creation, you can now wear bright tartan trousers tucked into your socks at home with total impunity...

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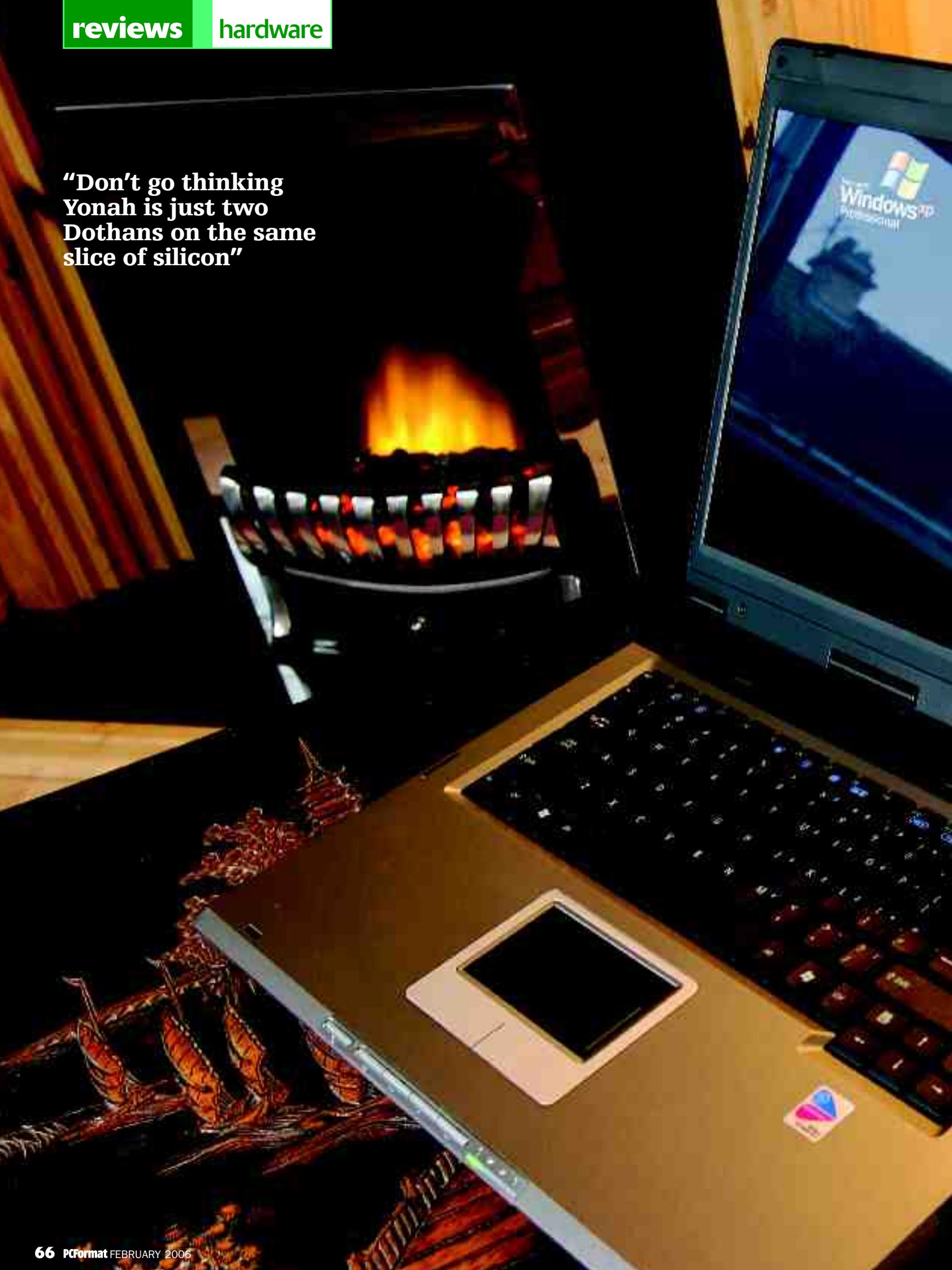


78

Athlon 64 FX-60

Acer F-19"

**"Don't go thinking
Yonah is just two
Dothans on the same
slice of silicon"**



MOBILE MONSTER

Intel Core Duo T2500 2.0GHz

A new name and an extra core for Intel's popular mobile CPU. Jeremy Laird wonders if Core Duo can really be twice as good as Pentium M

Price £250+ (price for 1,000 unit quantities) Manufacturer Intel Web www.intel.com

The Intel fight back starts here. The past two years have seen the world's biggest chip company concede time and again against AMD's unstoppable Athlon 64 processor. But 2006 is going to be different. Starting with this dual-core mobile processor, the new CPU launches will come thick and fast. By the end of the year, every processor Intel sells, from desktop to notebook and server, will be based on an all-new architecture. Nothing less than utter domination of every sector will do.

FRIED CHIPS

If that's the simple story of Intel's current predicament and how its plans for 2006 stack up, the background to this new mobile chip is a little more complicated. Intel already has a very competitive mobile CPU, the excellent Pentium M. It's a completely different design from the hot and bothered Netburst family of Pentium 4 and Pentium D desktop processors which are presently taking a spanking from AMD. Lower clocking and far more power efficient, Pentium M has been so successful Intel famously announced the plug had been pulled

on the Netburst family of desktop chips. All future consumer processors will be based on the next all-new mobile processor design, which goes by the codename of Merom.

But that chip is not this chip. For this chip is known internally at Intel as Yonah and it's a development of the existing Dothan Pentium M, not an example of Intel's so-called Next Generation Micro Architecture, due to appear this summer. However, don't go thinking that Yonah is nothing more than a pair of Dothans packed onto a single slice of silicon. There's more to this unusual processor than that.

Of course, many of the headline tech specs are predictable enough. Like Dothan, it's a 32-bit only chip that traces its roots back to the Pentium Pro processor. So, it's a relatively low-clocking processor with a shallow instruction pipeline (probably around 12 or 13 stages, though Intel has not provided an official specification) that's capable of significantly more number crunching per clock cycle than an ultra-deep pipeline design like the P4 processor in Prescott trim. Likewise, the spread of launch clockspeeds is hardly revolutionary – the fastest model tops out at just 2.16GHz.

YONAH LONE

However, that's where the old school Dothan-derived story ends and the intriguing tale of Yonah really begins. After all, this is the world's first dual-core mobile processor. And that, unsurprisingly, means a big marketing push from Intel. Not only has the Pentium M branding been dropped in favour of Core Duo and Core Solo monikers for dual and single-core variants respectively. But Intel is wheeling out yet another new processor numbering regime. So, if you were just getting used to the current three digit PR scheme, as in Pentium M 760, prepare to be baffled by the likes of Intel Core Duo T2600. The format of the final alphanumeric flourish comprises an initial letter indicating power class (L for low-

HOW WE TESTED

Thread or dead for Yonah

We put Intel's new Core Duo through a suite of demanding multi and single-threaded applications including games, productivity applications and media encoding and decoding tasks. Although the Yonah and Dothan notebooks were not configured with the same video chipset, we ran our Far Cry test at 640x480 and 800x600 in order to confirm that our results are CPU, rather than GPU limited.

As well as making comparisons with the outgoing Dothan

Pentium M processor, we also tested an AMD Athlon 64 X2 3800+ dual-core processor running at 2.0GHz in a roughly comparable desktop rig to see how Intel's new chip stacks up against the best existing dualie on a clock for clock basis. But note: the 3800+ only has 512k cache per core. Yonah boasts 2MB of shared cache.

As for battery life, we conducted both idle and maximum CPU load run down tests. Both tests were run with the screen set at medium light.

Location photo Andy Short



voltage and T for performance) and a four-digit processor number reflecting both performance and features. You have to hand it to Intel's marketing people. They've pulled off the extremely impressive trick of replacing an already impenetrable system with an even more confusing one.

At launch, low-voltage models of Core Duo are available at 1.5GHz and 1.66GHz speeds, while performance variants range between 1.66GHz and 2.16GHz and the budget-priced Core Solo is a 1.66GHz chip only. At least the awful new naming scheme reflects the effort Intel has put into making its first dual-core mobile chip a success. A long list of innovations and changes address both existing weaknesses in Pentium M designs and the number one problem facing any dual-core laptop chip – power consumption.

BIG SAVINGS

Most of the performance-specific optimisations focus on Pentium M's relatively weak handling of SSE instructions and floating point operations. Raw SSE decoder throughput has been enhanced, SSE2 instructions can now be handled by all three of the SSE decoders (on each core), support for SSE3 has been added and all-round floating point poke has been improved. On paper, these tweaks should help close the gap to desktop Pentium processors in applications such as high-definition video decoding. However, a bump in CPU bus speed from 533MHz to 667MHz and the added support for 667MHz DDR2 memory that arrives with the new 945 mobile chipset which accompanies Yonah should deliver



This simple plastic fascia hides serious mobile power.

Pure Presler power

The last Netburst CPU takes a bow and promptly cremates itself

The quest for clockspeed is over. Intel has launched the Pentium D Extreme Edition 955. And it's based on the final Netburst-powered processor core. Known as Cedar Mill in single-core format, the new chip is essentially a 65nm die shrink of the baking hot Prescott Pentium 4. However, this new Extreme Edition is being pitched as a dual-core processor based on the so-called Presler chip. But it's actually two entirely separate Cedar Mill processors that happen to be glued together onto the same processor package. For Intel, this configuration makes a lot of sense. It's made possible because Intel's Pentium 4-derived dual-core chips have no on-chip inter-core communications whatsoever. And it improves manufacturing

yields compared with dual-core processors made from a single slab of silicon, such as the first Smithfield Pentium Ds. If one of the cores on a Smithfield chip is a dud, the whole chip has to be thrown away. But a Presler processor can be made from any two functional Cedar Mill cores.

As for performance, Presler receives a 260MHz clockspeed bump compared with the fastest Smithfield dualies. It also has a faster 1,066MHz bus frequency. Unfortunately, that's still not enough to beat AMD's Athlon 64 X2 4800+ in most tests, much less the new Athlon 64 FX-60 dual-core monster. If Presler proves anything, it's that there's clockspeed headroom in the new 65 manufacturing process. Our sample reached 4GHz with air cooling alone.

"We couldn't resist disabling one of Yonah's cores to see how it compares"

data bandwidth provided by the CPU bus is always important for overall system performance. But for dual-core processors it's absolutely crucial. In simple terms, cores left waiting for data to arrive can't crunch numbers. Intel is keeping its cards close to its chest regarding the fine details, but it appears that while the CPU bus proper remains off-chip, there is a shared on-chip bus interface. Consequently, certain core to core communications can take place on-chip, without taking the relatively slow

extra punch in almost all circumstances.

As should Yonah's novel approach to CPU bus sharing. The

and tortuous route via the northbridge and back as with Pentium D dual-core CPUs. The most obvious benefit here is less latency when dealing with cache coherency issues.

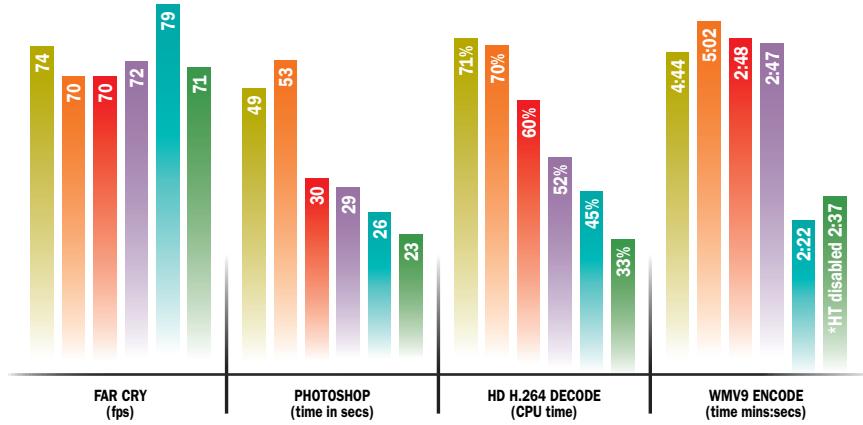
Which brings us neatly to another of Yonah's key innovations, its 2MB of fancy new Smart Cache. Rather than bolting a discrete pool of cache memory to each processor core, Yonah has a single block of L2 cache memory which is dynamically allocated according to demand. That minimises traffic over the CPU bus and limits idle CPU cycles. It's a unique feature among consumer market dual-core CPUs and it's made possible by that on-chip bus interface which sits in between the execution cores and the shared cache pool.

But Smart Cache isn't all about performance. It also enables the first of Yonah's many power saving

The first mobile dual-core chip compared

How does Yonah stand up against its mobile peers and desktop equivalents?

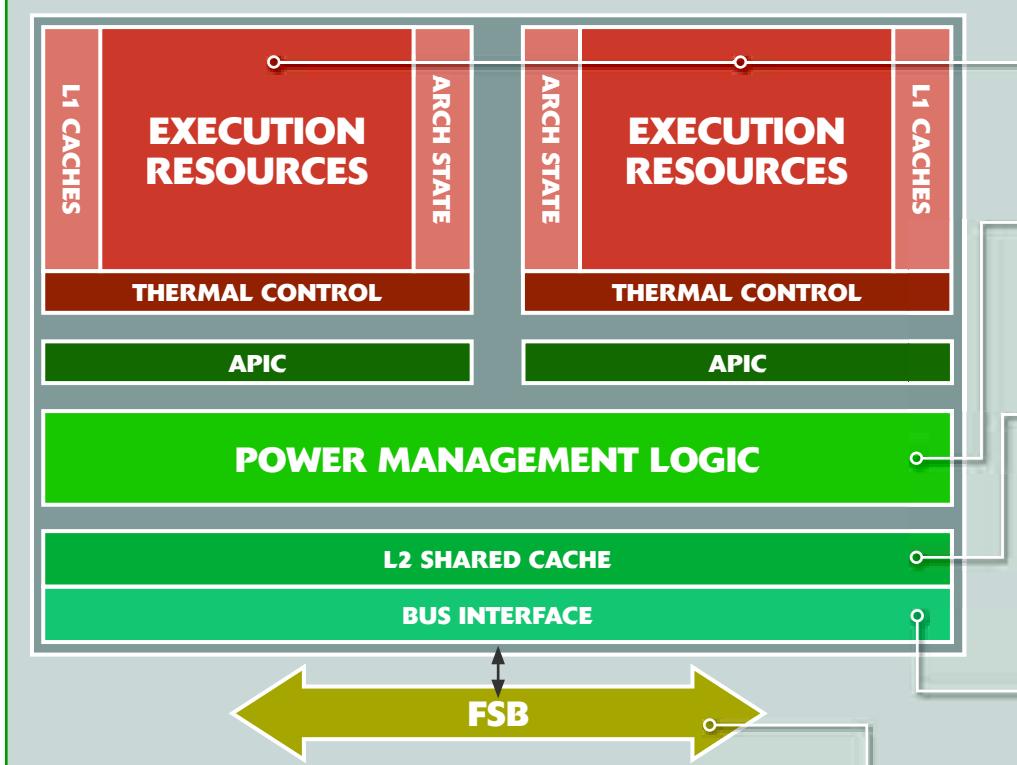
KEY
Intel Pentium M 760 2GHz
Intel Core Duo T2500 2GHz (forced single core mode)
Intel Core Duo T2500 2GHz
Athlon 64 X2 3800+ 2GHz
Athlon 64 X2 4800+ 2.4GHz
Intel Pentium D 855 Extreme Edition 3.46GHz



MEMORY BANDWIDTH	SISOFT SANDRA SSE2
3,311 MB/s	24,098 it/s
3,925 MB/s	21,146 it/s
3,925 MB/s	42,294 it/s
5,432 MB/s	41,499 it/s
5,786 MB/s	49,823 it/s
6,212 MB/s	65,247 it/s

BATTERY TESTS (screen at 1/2 brightness)	
Intel Core Duo T2500 CPU IDLE	2:20
Intel Core Duo T2500 CPU MAX LOAD	1:29

UP CLOSE The Yonah dual-core layout



strategies: powering down sections of the cache pool to reduce overall power consumption. What's more, along with variable voltage and clock frequencies, Yonah has no less than six operating states ranging between fully active and the so-called Enhanced Deeper. Finally, this is Intel's first mobile chip based on its new 65nm process. Intel claims all these power saving measures allow its dual-core mobile chip to match single-core predecessors in terms of low consumption levels.

UNITED WE STAND

So, similar power consumption, but twice the performance thanks to two cores, right? Not quite. In pure performance terms, Yonah isn't a comprehensive triumph. But it is damned impressive. In multithreaded applications such as *Windows Media Encoder*, *Photoshop* and *iTunes*, a dual-core 2.0GHz Yonah is up to 71 per cent faster than a 2.0GHz Dothan Pentium M. That's a stunning result given the comparable power consumption. What's more, that dual-core poke doesn't just mean faster encoding or image processing times. It also allows you to do things that simply aren't possible with a single-core Pentium M chip. Like decoding high definition H.264 video. In fact, that's something not even the most powerful single-core desktop CPUs,

including AMD's Athlon 64 FX-57, can manage. And like any dual-core chip, this is great for multi-tasking.

So, what's the problem? Well, for single-threaded applications – most notably games – Yonah is actually slightly slower than an equivalently clocked Dothan. Doubting Thomases that we are on PCF, we couldn't resist the temptation to disable one of Yonah's cores to see how its core-for-core performance compares with a Dothan Pentium across our entire benchmark suite. As our results show, a lone Yonah core is beaten by Dothan, even in SSE and floating point-intensive applications such as video encoding. Has Intel been telling porkies about performance optimisations? Probably not. One of the downsides to the Smart Cache technology is that it increases cache latency by a full 40 per cent. We suspect that's enough to cancel out the benefits of many of Yonah's other tweaks – on a single core at least.

As for battery life, it's too early to draw any conclusions – our Asus-built Yonah notebook only managed a little over two hours on a light load. But until we've sampled more Yonah systems, it's impossible to say whether that result is down to the notebook, processor or motherboard.

Our final reservation involves Yonah's 32-bit only data handling. With

The outside world

The latest Centrino laptops will boast bus speeds of up to 667MHz, but with Intel's desktop FSBs about to double that, can we expect a revision later on?

the prospect of the first widely-adopted 64-bit OS (Windows Vista) later this year, 64-bit support would be a nice future-proofing feature.

And it's that lack of 64-bit support that reveals Yonah's stop-gap status. Yes, it's an impressive chip packed with fascinating tech. Undoubtedly it delivers truly fabulous multi-threaded performance in a mobile package. But with Merom due out in six months, and likely to bring all the dual-core benefits of Yonah and add 64-bit support, it could also be a CPU with an extremely short shelf life. **PCF**



Looks unassuming for the world's first dual-core notebook.

Configuration Dual-core, off-chip memory controller and CPU bus

Clockspeed 2.0GHz

Bus speed 667MHz

Cache 2MB L2 (shared)

Data handling 32-bit

Key extended instruction sets SSE, SSE2, SSE3

Manufacturing technology 65nm, strained silicon

Memory support 533MHz & 667MHz DDR2, dual channel

Socket 479 (not pin compatible with previous 479 Pentium M socket)

Compatible chipsets Intel 945 Express Mobile

89% **PCF says...** "The best mobile CPU by miles. Only lacks the 64-bit support."

Multi-function printers

TESTED!

We threw colour documents, black and white photos and more at these plucky MFDs...

Epson Stylus DX4800

£89

So you want inkjet prints that don't smudge? Look no further than the DX4800, which uses Epson's latest resin-based DuraBrite inks.

Lexmark P6350

£105

With its card readers, LCD preview screen and four-ink or six-ink options, the Lexmark looks like a contender. Amazingly, it also has the cheapest colour printing ink prices in the group.

HP PSC 2355

£124

Like the Lexmark, this HP model gives you four-ink and six-ink options by swapping black and photo cartridges. It's also wonderfully intuitive to use.

Epson Stylus Photo RX520

£139

This Epson can even deliver photo prints direct from transparencies or negative film. But can the four-ink printer do it justice?

Canon PIXMA MP500

£169

Canon's five-ink printers have set the standard for combining fast printing with classy photo output. The MP500 builds on this and brings one of Canon's class-leading CIS scanners to the printing party.

Impressed by their multi-tasking abilities, Matthew Richards gets down to the nitty gritty with the latest all-in-one devices

When you consider how incredibly versatile any modern PC is, it's surprising that so many computing peripherals are one-trick ponies. Speakers simply speak, mice merely mouse around and webcams just shoot you in the face. They all have their role to play and wouldn't dream of infringing on another peripheral's territory. By comparison, the latest round of multi-function printers are out to take over the world.

Of course, any self-respecting computer gadget has to have its own acronym and this relatively new breed of printer is so good, they acronymed it twice. They're either called AIO (All In One) printers or MFDs (Multi-Function Devices). Either way, they aim to do a whole lot more than just print documents and photos.

The first MFDs to hit retailers' shelves sought to bridge a gap between desktop printing and the outside world, by including standalone fax facilities. The fact that pretty much every PC on the planet now has its own fax/modem nowadays, though, means that MFDs have now taken a different road, lured by the bright colours of digital photography.

SAY CHEESE

Human beings love to store similar things in the same place. We're genetically programmed to retrieve our old photos from shoeboxes at the back of the wardrobe and scan them in, so that they can take pride of place alongside our more recent digital photos. MFDs oblige, with the latest CIS (Contact Image Sensor) scanners that enable accurate colour rendition.

Another advantage of CIS scanners is that they're super-slim, ideal for

building into the lid of a printer without doubling its size. And finally, because they use an LED light source rather than a conventional CCF (Cold Cathode Fluorescent) scanning lamp, you don't have to hang around, waiting for it to come up to its optimum operating temperature to get accurate colour balance.

Put a scanner and a printer in the same box and you immediately get a bonus advantage, on top of the space-saving benefits. With even rudimentary jiggery pokery, any self-respecting MFD has a range of standalone controls so that you can copy not only mono or colour documents at the press of a button, but also full-on glossy photographs, taking advantage of the latest scanners' and inkjet printers' photo-friendliness.

Continuing the digital photography theme still further, all of the multi-function printers in our testing group

have PictBridge ports built in, for direct photo printing from like-minded digital cameras, or even smartphones. Each printer also comes with a built-in, multi-format media card reader, so you can whip your memory card out of your camera and print direct from that as well. To help with the process, and to save you the trouble of printing an index sheet first, all but one of our printers has a colour LCD preview screen fitted as well. Suddenly, straightforward printers that merely print look old hat.





HOW WE TESTED

MFDs examined

Before we get all carried away about multi-tasking frippery, it's important to remember that any MFD printer is, first and foremost, a printer. We therefore began by printing a selection of test documents, ranging from mono text pages with a mix of fine, swirly serif fonts and large, extra-bold slabs of lettering, to full colour DTP pages with a mixture of text and colour graphics. Finally, we printed out a set of digital photos, picked to emphasise colour accuracy for vibrant hues and subtle skin tones, contrast, tonal range, sharpness and so on. The next step was to check out the quality of the scanner. Any

modern scanner should be able to scan mono text and colour documents, almost in its sleep, so we concentrated on photo prints, again using a set of photographs to check for a full range of image attributes from colour rendition and contrast to sharpness. Standalone copying for documents and photos is a key aspect of modern multi-format devices, so we carried out a range of benchmark speed tests for copying mono text and colour DTP A4 documents in normal quality mode, as well as for copying glossy A4 photos onto the manufacturers' own-brand glossy paper stock, in 'best' quality printing modes.

Photography Louise Broom

What a card Look out for built in card readers on most photo printers.

Canon PIXMA MP500

£169

Manufacturer Canon [Web](http://www.canon.co.uk) canon.co.uk

95%

gold
PCFormat

This mighty beast from Canon literally puts some MFDs in the shade, being about twice the size of some of the more compact models on the market. It's more than worth every square centimetre of space though.

One of the problems with inkjet printing is that for fast, high quality output with black text, a four-ink process is best, whereas for photo printing, you really need the extra colour range of a six-ink system. Some printers go down one route or the other, while others demand that you swap cartridges around depending on the type of print job. Building on the success of printers like its i865 and iP4000, Canon's MP500 is based on a unique five-ink system that uses a dye-based black ink as well as a pigment-based black in the mix. The result is fast, accurate general-purpose printing and photo prints that are so rich in contrast and colour that, for our money, they're actually better than the results from many six-ink printers.

The all-rounder nature of the MP500 is extended by its superb CIS scanner. The quality of this unit is excellent and a testimony to the fact that Canon is the only manufacturer of the group who markets this type of scanner in standalone form. Coupled with a large 2.5-inch colour LCD screen, multi-format card reader, thoroughly versatile standalone controls and immaculate build quality, the MP500 is every inch a winner.





HP PSC 2355

£124

Web www.hp.com/uk

88%

With battleship-esque build quality and intuitive operation, HP MFDs have always been popular in the business sector. The PSC 2355 aims to bring a little of their reliability and ease of use into the consumer market, coupled with a less austere appearance.

The specs of the 2355 are impressive. There's a 4,800x1,200dpi scanner (the highest optical resolution in the group) and the printer uses HP's thermal inkjet technology, based on a tri-colour cartridge and the choice of black or 'photo' cartridges for four-ink or six-ink printing.

Don't be fooled by the myth that tri-colour cartridges are more expensive to run, either, as the 2355 can use HP's high-yield cartridges – which put many single-ink printers in the shade when it comes to ink costs. Printing is super-speedy in draft mode which, unlike many printers, actually gives usable results with solid blacks for text and decent colour. That said, photo printing is rather slow using in four-ink mode and even slower using the photo cartridge. Photo prints are worth the wait, however, with quality exceeding the Epson printers and almost matching the Canon MP500, in our tests.

Standalone copying is a breeze, thanks to an intuitive interface that relies on a generous number of control buttons and a very clear colour LCD, which doubles as a preview screen for the built-in card reader.

Epson Stylus RX520

£139

Web www.epson.co.uk

55%

When you see the word 'photo' in an Epson printer title, you can normally be assured of a six-ink process that delivers stunning photo quality. For proof of this particular printing pudding, look no further than the new R220 and R340 models, both of which generate spectacular photo results at the price. For our money, the no-brain option for a photo MFD would have been for Epson to simply build a scanner into the lid of the R340 printer but, no, the RX520 relies on a humble four-ink system.

It's a shame because the scanner in the RX520 is a real peach, with not only an ultra-crisp 2400x2400dpi optical resolution but also a built-in Transparent Media Adaptor. The only model in the group to include a TMA, the RX520 can create photo prints from 35mm slides or negatives in standalone mode, without the aid of a PC. Naturally, you can also scan prints or slides direct into your PC as well, with excellent quality results, although negative scans are the poor relation, as is almost always the case with film scanning.

Mono and colour printing and copying are quite quick and copying photos in standalone mode returned the quickest times of any printer in our tests. However, this is really only due to the fact that the Epson can't print in 'best' quality mode in standalone operation. The real letdown is that the colour and contrast delivered by the four-ink system are average at best for photo output, failing to take advantage of the scanner and making the RX520 an opportunity missed.





Lexmark P6350

£105

Web www.lexmark.co.uk

50%

On the face of it, the P6350 hides an awful lot of printer under its modest price tag. For just over £100, you get a full complement of card-reading skills, a colour LCD screen, PictBridge support and a high-resolution 4,800x1,200dpi scanner. Down in the nether regions of the printer, dual cartridge options enable you to swap out the black cartridge for an optional photo cartridge, which teams up with the normal tri-colour cartridge to give you the choice of four-ink as well as six-ink printing.

The P6350 really sells itself as a photo all-in-one printer but, sadly, it's here that Lexmark fails to cut the mustard. Perversely, in four-ink mode, mono output and general purpose colour printing is of very high quality and the printer goes about the task with some gusto, delivering some of the fastest print speeds in the group. By comparison, glossy photo printing is slightly dull in four-ink mode, with only a limited colour space. Switch to the six-ink line-up and things don't get a whole lot better, with muted colours and muddy looking skin tones.

The scanner side of the MFD equation also lacks the quality of other models in the group, with more digital noise present in dark areas of scans and a slight lack of sharpness. On the plus side, and somewhat remarkably for a Lexmark printer, the P6350 has the cheapest colour ink running costs in the group. Standalone copying is also fast, and benefits from a wide range of options.

Epson Stylus DX4800

£89

Web www.epson.co.uk

65%

Printers aren't just for fun. Sometimes we all have to print serious things onto paper, like a CV. The trouble is, no matter how pristine the pages are when they exit the printer, the slightest bit of dampness or an errant finger dragged across the page can reduce immaculate printouts to a smudgy mess. In the fight against this state of affairs, the DX400 reigns supreme.

The DX4800 uses Epson's latest generation of DuraBrite inks, which are resin-based, which means the ink is practically dry the moment it hits the paper. Using plain or even recycled paper, prints are remarkably resistant to smudging and smearing, giving you robust print quality that shrugs off abuse.

For such a compact printer, the DX4800 has a reasonable set of features, including the now de rigueur PictBridge support and a built-in multi-format card reader. However, unlike all the other printers in the group, there's no colour LCD preview screen, which means that you have to resort to printing index sheets of digital photos from memory cards before choosing which ones you want to go large with.

In fact, the whole area of photo printing is the Achilles heel of the DX4800, for while plain paper output is excellent, glossy photo prints are somewhat dull and lacklustre, even using Epson's own specialist DuraBrite glossy photo paper. Another downside of photo printing is that the DX4800 has the most expensive colour ink cost per page of any model in the group.



Conclusion

Can one device handle all your printing needs?

Even inkjet printers have their work cut out trying to live up to your printing expectations. Start adding requirements like scanning and photocopying and MFDs have every right to look worried.

There's a big difference between general-purpose and photo printing. Traditionally, inkjets use pigment-based inks to output solid colours and rich black text. Photo printers rely on dyes to recreate a wider colour spectrum. This is usually at the

expense of black printing, resulting in pale text. HP and Lexmark printers in the group solve this by using four inks for general purpose printing or six for photos. Epson printers stick with four colours and, while the RX520 is much better than the DX4800 for photos, it's still not as good as a six-ink printer.

The Canon PIXMA MP500 breaks the mould with its unique five-ink system, using both pigment-based and

dye-based black inks full time. The result is excellent quality, both for general purpose and photo printing, without the need to faff around changing cartridges.

The MP500 also produced the best scans in the group, with its 1,200x2,400dpi scanner producing excellent colour rendition, contrast and sharpness. The Epson and HP scanners

weren't far behind and only the Lexmark scanner offered distinctly poorer quality, especially for high-

dpi photo scanning.

Bringing everything together, the Canon and HP printers both have extremely intuitive standalone controls for direct copying or photo printing, without the need for switching on the PC. The Epson printers take a little more getting used to, as you'll see from our 'Who needs a PC?' boxout opposite. All things considered, the Canon MP500 is a worthy winner. **PCF**

“Canon's MP500 produced the best scans in the test”

Who needs a PC?

It's time you cut out the middle man

If TV ads and retailers' shelves are anything to go by, direct photo printing is the new big thing. Fuelled by the digital camera revolution, a growing number of photographers want to be able to print photos without the need to buy or use a PC. Any of the printers in this group can do direct photo printing, either via a PictBridge connection or from the camera's memory card, which can be inserted into the built-in multi-format card reader.

When printing from memory cards, a colour LCD preview screen is a bonus, as it saves you the time-consuming and costly chore of printing an index sheet first to see which photos you want to work with. All the printers in the group oblige here, except the Epson DX4800.

Living up to their 'all-in-one' tag, these printers go a lot further than merely offering direct photo printing. The ability to scan documents or photos into your PC, using the built-in flatbed scanners, is distinct advantage but the scanners really come into their own for standalone copying. Without even switching on your

PC, you can use any of these models as a fully fledged photocopier. For document use, an A4 mono text page with a typical five% ink coverage returns an ink cost of around 3p per copy in most cases, and as little as 5p for colour. This makes our MFDs good value simply as domestic photocopiers, disregarding all their numerous other talents.

For standalone photocopying success, the printers rely on a good control system. Of all the printers in the group, the Canon and HP models proved to be particularly intuitive, with a generous range of buttons and a colour menu screen, enabling you to make the most of features like enlargements and reductions while copying, as well as setting up different document types. The Lexmark control system was a little less intuitive than the leading models and Epson's printers were positively arcane, to the point that the RX520 comes with an optional stick-on legend, simply to explain the meaning of all the icons next to the printer buttons.

IN DETAIL

Looking for perfection in all aspects

£89

Epson Stylus DX4800

65 %



* Best in class

£105

Lexmark P6350

50 %



£124

HP PSC 2355

88 %



£139

Epson Stylus Photo RX520

55 %



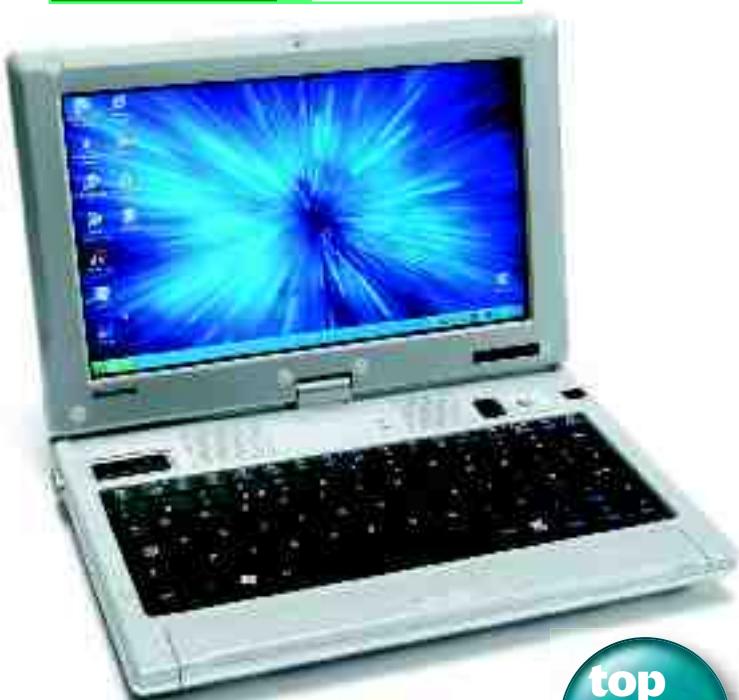
£169

Canon PIXMA MP500

95 %



	£89 Epson Stylus DX4800	£105 Lexmark P6350	£124 HP PSC 2355	£139 Epson Stylus Photo RX520	£169 Canon PIXMA MP500
Max print resolution	5,760x1,440dpi	4,800x1,200dpi	4,800x1,200dpi	5,760x1,440dpi	9,600x2,400dpi
Optical scan resolution	1,200x1,200dpi	600x2,400dpi	1,200x4,800dpi*	2,400x2,400dpi	1,200x2,400dpi
Number of inks used	4	4 or 6*	4 or 6*	4	5
Cartridges	4 x single-colour	Tri-col, photo, black	Tri-col, photo, black	4 x single-colour	5 x single-colour
Card reader/LCD screen	Yes/No	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Max mono print speed	20ppm	24ppm	23ppm	20ppm	29ppm*
Max colour print speed	19ppm	18ppm	18ppm	19ppm	19ppm
Mono A4 copy speed (nml)	36s	18s	42s	33s	17s*
Colour A4 copy speed (nml)	54s	39s	50s	41s	29s*



SUPERFLY

Flybook

Tidy tapping for space-conscious scribes, it's more notepad than notebook

Manufacturer Dialogue Price £1,399 Web www.electroniczone.co.uk

We find it hard to get our collective head around how small this ultra-portable notebook really is. It's truly microscopic, to the point where you can't imagine it has much good stuff onboard.

Don't dismiss it with a cursory glance, though. This little chap is spec'd up to the nines with all the fruity bits you'd expect on any modern notebook, bar one thing: an optical drive. And let's face it, that's not really a necessity 90% of the time. With a 1GHz Transmeta CPU, you're not really going to be throwing latrines at anyone with the Source engine, but this is an excellent productivity and browsing tool, and for both these tasks, it has ample onboard oomph. Ethernet, 802.11g Wi-Fi, Bluetooth and GPRS – there's a SIMM card slot underneath – mean the Flybook's loaded with more connectivity than most machines.

COME FLY WITH ME

The screen resolution matches the panel-size perfectly, making it more usable than some ultra portables, which marry high resolutions with small screens to leave you squinting (yes, we're looking at you, Mr Vaio). And a neat trick up the Flybook's Gap Kids sleeves is the way you can flip the screen for Hot Tablet PC action – there's a

slide-out stylus on the underside to sweeten the deal. Sadly, it doesn't come with Microsoft Tablet software, so you'll have to rely on the proprietary Flybook software, which to be honest, does everything you need it to.

The only fly in the ointment is the nerve-jangling price tag. Nearly a grand and a half is a hell of a lot of money, considering you can pick up a standard Tablet PC notebook for half that price. But what you're buying with the Flybook is a machine that's about the size of a hardback book, and one that weighs considerably less. It's a very sexy piece of kit, and no mistake – but for the vast majority of us, stratospherically out of our price range.

AI BICKHAM

CPU Transmeta Crusoe 1GHz

Memory 512MB (shared)

GPU Radeon Mobility 7000

I/O PCMCIA, 2 x USB 2.0, 2 x mini-1394, LAN/Modem, Earphone/mic, VGA

Screen 18.9", 16:9

Resolution 1,024x600

Weight 1.2Kg

Dimensions 235x155x31mm

Battery life 2.5hrs

83 % **PCF says...** "Gorgeous, petite and usable, but at what cost?"

top gear
PCFormat

STREAM ROOM**Sitecom Wireless Media Player**

Proof positive that you don't need a big noisy box to get media to your TV

Price £120 Manufacturer Sitecom Web www.sitecom.com

Should you be unable to have your PC close to your TV, we feel your pain. Having to peer at a monitor in order to watch your favourite downloaded (and legitimately converted) media can be a thankless task for your poor beleaguered eyes. You want to stream media to your living room. It's the way forward, and it's just what Sitecom's box provides. Thinner than a slimline DVD player, and narrower too, this is unlikely to face accusations of space-hogging.

MOVE YOUR MEDIA

Two things prevent the WL-124 from being the perfect media streamer. Firstly, the realistic capacity of wi-fi networking is fine for throwing DivX files around the network, but the higher the resolution, the more problems occur. Video in particular gets mighty choppy if you're attempting to stream at the same time as the wireless connection is being used for a large download or other such network-heavy activity. We hate to say it, but a wired solution might have been more efficient in this case. Secondly all media needs converting before streaming (the WL-124 takes an MPEG-2 stream) meaning a server PC needs to be switched on whenever you want to watch anything – this won't work with a NAS, for example. If it weren't for the quiet and

unassuming living-room charm of the tiny little box, we'd have branded this completely redundant against a PC with some kind of TV out. The lack of an onboard decoder does keep the price down mind, and the WL-124 should be compatible with any and all codecs installed on your PC, even those not yet invented. We're sure they could have added on-board decoding of things like DivX, but the extra expense would have crippled the box in the future.

As it is, this is a perfectly priced bit of kit. Video output is flawless, and we didn't notice any real degradation due to the conversion process, with S-Video proving predictably sharp. The interface isn't quite Media Center Edition looks-wise, but it's a reasonable route to your music and video, easily navigated with the better-than-average remote. The best thing is that it's a realistic alternative to a Media Centre plus Extender.

Alex Cox

Formats supported MPEG 1, 2 and 4, AVI, VOB, JPEG, BMP, TIFF, MP3, WMA

Connectivity Wireless 802.11g

Video output Composite, S-video (PAL/NTSC)

Audio output Analogue, S/PDIF

Dimensions 290x203x67mm

84 % **PCF says...** "A stop-gap for those without funds for a full media centre."





"Take care of it and the Vision M will reward you with the most sublime visual pleasures"

Ironically this may well be one of the places you end up using your PMP.

FILM 2006

Creative Zen Vision M

Sexy, sassy, pocket-sized movie viewing that stands up against the iPod Video. Please welcome the very pimp of tiny PMPs...

Manufacturer Creative Labs **Price** £230 **Web** europe.creative.com

The Zen Vision M is the device that has finally sold your humble reporter on the idea of portable media players. Never really seen the point before – why watch a film in micro-vision when you can watch it full screen at home? And yet, there's a remarkable novelty to watching *Battlestar Galactica* on a train rattling its way through the Wiltshire countryside, or even tucked up in bed – that simply can't be denied. Neither can the fact that PMPs really do make journeys go by quicker.

So what's special about Creative Labs' latest baby? Well, for starters, it strides in as direct competition to the iPod Video. It's obvious – just look at the glossy black plastic shell, although you'll find it a tiny bit fatter than the equivalent 30GB iPod. In addition, it scratches just as easily; we managed to inscribe a patina of circular scuff marks onto the screen by simply polishing it with a soft cloth; evidently the unit's coating is susceptible to even the smallest of particles. And even though you don't notice the marks when the backlight's on and there's a movie playing, it still irks.

Another minor downside is the way it hangs for a picosecond every 10-15

"We'll take 256,000 colours over the iPod's 65,000 thanks"

minutes when decoding large movie files. But that's pretty much the sum total of the Vision M's ugly bits. In every other respect, it's altogether superior to the competition, in both specification and performance. How's about that 256,000 colour screen? We'll take that over the iPod Video's

65,000 colours thanks. You really can see the difference too – blacks are blacker, rather than just graded layers of grey, which happens all too often with the iPod, and colours are vibrant.

FLEXIBLE FRIEND

It's also a very versatile player, able to handle myriad file types – all the MPEGs, DivX, XviD, WMA – pretty much everything bar H.264, which is quite understandable as it's Apple's pet codec, and Apple doesn't share. It's also a cracking little picture viewer and a great MP3 player. While it weighs in at £20 more expensive than a 30GB iPod video, you're buying awesome file format flexibility, better visuals, and the extras we've come to expect from Zen players – the ability to

record FM radio and voice. It's simply a joy to use, and the buffering pauses really are minor. Our only real concern is that it's not as hard-wearing as most players; if you're using it as an MP3 player, it becomes an issue simply because of the heavy, in-and-out-of-pocket usage music players get. But take good care of it, and the Vision M will reward you with the most sublime visual pleasures – at least until the 16:9 widescreen-aspect Zen Vision hits the store shelves some time later this year.

AI Bickham

Battery life 14hrs (music) 4hrs (video)

Media format support DivX, XviD, WMV, Mpeg 1-4, JPEG

Audio format support WMA, MP3

Screen 2.5" 256,000 colour LCD

I/O Headphone jack, AV-out

Capacity 30GB

Interface USB 2.0

Software Creative Media Source, Creative Sync Manager

Dimensions 4.89x2.93x0.79 inches

Weight 238g

89% **PCFormat says...** "The best of the miniature PMPs – but treat it nicely, or there'll be tears."

top gear
PCFormat



PRANCING HORSE

Acer F-19"

The monitor Michael Schumacher probably doesn't use to check his emails

Price £400 Manufacturer Acer Web www.acer.co.uk

Ferrari baseball caps say a lot about their owners.

Chances are, it means he's got a braying laugh, votes Conservative and watches weather reports with fanatical dedication before leaving the house. In other words, he's probably a middle-manager in his 50s who owns a Lexus, yet surrounds himself in the trappings of something he can never have. Similarly, if he buys this Ferrari-embazoned monitor, he'll doubtless connect it to some Celeroned-up, integrated graphics nothing of a workstation, rather than the pounding beast of a games machine the Ferrari philosophy better represents.

GET WET

Like the Ferrari laptop Acer's been touting for a couple of years now, this gaudy red'n'black screen looks absolutely foul to anyone who doesn't fit the above stereotype. But, again, like the last iteration of the laptop, it's a truly fine piece of kit if you can see past the mid-life crisis styling. Sure, an 8ms response time isn't breaking any land speed records, but since 12ms and under there've been more serious priorities in rating monitors. Take brightness – no problem here, with a generous 500cd/m² – or contrast, again, a solidly above-average 550:1. That's

all poured into an Xblack-esque wet-look CrystalBrite panel capable of images that makes most other monitors' efforts look bland and blurred by comparison. We did hit a slight snag with the viewing angles – if you like your LCDs tilted, you'll notice the top of the screen image loses definition.

The real stinger is that £400 asking price. There's an integrated TV tuner, SCART, composite and S-video ports, and those always-futile onboard tinny speakers that are blighting ever-more monitors, but these are not enough to justify a cost more than double most of its 19", 8ms peers. Of course, if you're a textbook Ferrari fan who doesn't let common sense interfere with your love for a corporation run by cheerless businessmen who only want you for your cash, then that £200 of branding blood money won't trouble you one jot. **Alec Meer**

Type TFT LCD

Size 19-inch, 5:4 aspect ratio

Resolution 1,280x1,024

Brightness 500cd/m²

Contrast ratio 550:1

Inputs DVI, VGA, SCART, S-video, composite, TV coaxial, stereo audio

74 % **PCF says...** "A splendid screen undermined by a very silly price."

BIG-BONED BURNER

Lite-On Ez-Dub

This can't be right. A USB optical drive that isn't exactly the same as all the rest?

Price £63 (£53 ex VAT) Manufacturer Lite-On Web www.liteon.com

Burning discs full of goodies is both exciting and fun, but wouldn't you know it – you've passed 30, and you're suddenly too stupid to do it properly. Your fuzzy eyes can't find the right icon on screen, and your dried up walnut of a brain is no longer supple enough wrap itself around whatever 'burning software' you're faced with. You do remember the use of the word 'dub' in the duplication sense, but have precisely no idea how to copy a CD. This new fangled device is definitely for you.

Over-exaggeration aside, the Ez-Dub is actually pretty useful. It transplants everything complex into two simple buttons on the top of the tough drive casing, one labelled 'File', the other marked 'Dub'. 'Dub' makes the unit seamlessly copy whatever media lurks in the source drive onto whatever you've got in the EZ-Dub. The key is that there is precisely no interaction with the PC. Just mash the button and after a few minutes of data transferral, a warm copy pops out. The File button is only slightly more complex, which squirts whatever files you've designated (via the PC-based drop bucket) onto your waiting disc.

The drive casing itself is reassuringly robust. There are faster rival devices already on the

market, but not at this sort of price point. It handled everything we threw at it using just the buttons on top, only balking at the prospect of copying DVD movies and copy-protected discs. In those cases the error messages weren't quite as idiot-proof as the rest of the package, though they match the clunky software perfectly.

MOVE YOUR MEDIA

Unfortunately the Ez-Dub is a pretty cumbersome lump of a thing: adding one to a modern laptop bag isn't likely to be pleasant, and you'll need to be near a power socket whenever you want to use it. With that being the entire list of its faults, we can safely say that if you want a USB burner – or if you know someone with one finger and a tiny brain – it's worth putting on your list.

Alex Cox

Interface USB 2.0

Random access time 160ms

Speed DVD+R dual layer 4x

Speed DVD-RW 6x

Speed DVD+RW 8x

Speed DVD+R/DVD-R/DVD-ROM 16x

Speed CD-RW 24x

Speed CD-R/CD-ROM 48x

85 % **PCF says...** "Ruggedly put together, and child's play to use."





STRONG, SILENT TYPE

Zalman TNN 300

With its huge heatsink-adorned design, this case is proof that a big case need not necessarily be a noisy one

Price £530 Manufacturer Zalman Web www.quietpc.com/uk

This is hardly a case that's been aimed squarely at gamers. We at PC Format are quite fond of our precious thumbs and, in Zalman's new TNN 300 fanless case, our Warcraft-wearied digits appear to have met their nemesis. The left one is likely to be sheared off when lifting the case out of the box, thanks to sharp vanes on the giant external heatsinks, and the right one will be pulverised the first time that heavy door (which has the silent PSU built into it) clatters down while the case is horizontal. All this could leave you lacking the opposability required to enjoy, say, the bundled remote control.

QUIET PLEASE

There's no denying that it's a handsome beast though. More than just reminiscent of the monolith from 2001: A Space Odyssey, the black finish and finned heatsinks make it a work of stylish techno-chic. It isn't just externally striking either: the inside of the case, with its gold heat pipes and violet CPU and GPU blocks, looks like a Fifties hot-rodder's fever dream. Everything in the case feels expensive, as well it should with an asking price of £530, but as a

result it is hernia-inducingly heavy. We've already touched on the fact that even the case door is ludicrously weighty, and the pivoting wheel to allow you to rotate the case without lifting it is a necessity.

Inside the case, things are extremely cramped; Micro ATX boards are the only flavour accepted and the cooling rods themselves, particularly those for the GPU, take up a fair amount of real estate. The concept does work though, and we can see this case succeeding as a particularly elegant (and quiet) media centre PC. Of course, the case itself will

have to be on show if only for the air to circulate sufficiently around it; wandering sun must be accounted for as well, we'd

imagine, lest the entire thing should get a little too toasty and suddenly burst into flames.

If you are keen on the idea of having a faintly ominous, almost totally silent PC that most

closely resembles a stealth bomber parked in the middle of your living room, and have an entire afternoon to spend with a relatively fiddly build, the Zalman TNN 300 is great. It is, however, potentially one of the most physically and financially damaging cases you are ever likely to find.

Mike Channell

"An almost totally silent PC that resembles a stealth fighter"

Sinking feeling

Keep cool the Zalman way...



These beautiful cooling pipes are the key to this case, silently drawing the heat from the chips to those enormous external heatsinks. Remember to carefully check lists of compatible processors and GPUs before buying as there are some limits to the levels of heat the TNN 300 can dissipate.

Form factor Micro-ATX

PSU 350W

Drive bays 1x optical, 2x HDD

Ports 1x USB 2.0, 1x infrared, memory card reader

Extras Multimedia remote control

79% **PCF says...** "It may be stylish in a vault-like way, but it's also hideously expensive"



COOL LAPTOP

Asus W5A

Laptop bulk begone – slimline desktop replacements are on their way

Price £1,299 Manufacturer Asus Web www.asus.com

Modern laptops stand or fall on one simple criteria: how portable they are. Everyone who's ever owned one has chucked it, and its attendant brick-like adaptor, in a bag and bombed recklessly out of the house, and these days, doing so without permanently damaging any vertebrae is a prerequisite.

LIGHTWEIGHT LAPTOP

You can ask no more from the W5A in this sense. It's very small, but it squeezes a full-size keyboard into its lithe 1.8Kg frame, as well as an optical drive and all the trimmings. The chiropractically inclined among you will also be pleased to hear that the adaptor is tiny, too and there's an added bonus in the built-in webcam.

If you're hip and cool and into those high-contrast black screens, you're in luck here. The thickly-framed 12.1 inches is more than enough, and things don't get too unreadable at the decent native 1,280x800 resolution. You might have a bit of trouble finding a perfect angle for the brightness, though. As for the chassis, it's gorgeous. A cold, sinister gunmetal black outer shell, with sleek ash insides, bronze finishing, and a clever claspsless design. The thicker-than-usual base is merely a product of the built-in DVD±RW

drive, and it's well worth it to not have to carry around a separate unit. The battery gives it a bit of a fat bum, though.

Even the cooling is impressive. We didn't even manage to make it pump out hot air, which is testament both to the clever and incredibly quiet cooling design and the frosty Pentium M. You won't get much out of it in the way of graphics, with 64MB of the 512MB RAM dedicated to the Intel 915 chipset, but it's enough, and the 915 is hard not to love.

Asus has scored a hit with the W5A. It looks lovely, it's small enough to be sufficiently trendy but big enough to not make you look like a hunched up giant, and while it's not cheap, it's not over-inflated. But look around at the same sort of price range and there's a lot to choose from. After all, being very good is not quite the same as being great.

Alex Cox

Processor Pentium M 1.73GHz

Chipset Intel 915

RAM 512MB

Hard drive 120GB

Weight 1.8Kg

Warranty Two years collect and return

85% **PCF says...** "Among the best ultraportables on the market today."

top
gear
PCFormat

EVEN COOLER LAPTOP

Gateway MX6645b

Irrefutable evidence that these are strange times for the humble laptop

Price £699 Manufacturer Gateway Web uk.gateway.com

Gateway is a phoenix-like company, rising from ashes of its flesian-embla to make another assault on the home PC market, but by the looks of the MX6635b it is doing its darndest to drive itself out of business once more. Not because of any quality issues, but because this is a laptop that's far too cheap. Seriously. We'd peg it at a £1000, not the frankly ludicrous £699 it comes in at.

SUPERB SCREEN

Everything you could really want is here. In system-power terms it's certainly no slouch, with a full gigabyte of RAM supporting the 1.73GHz Pentium M. That's just about unheard of at this price. Not only that, but there's a 100GB hard drive in there, and the stock Intel 915 chipset. Solid performance with no scrimping? How did they do it? How can Gateway not be losing a hundred pounds on every machine it sells? We don't know exactly, but we're certainly not complaining. This is a fluidly performing machine that just feels out of place in its bracket.

This is desktop replacement sized (and powered, really) with 15.4 inches of widescreen – it's a clear resolution, and the glossy

screen is an excellent touch, though awkward under bright light. It also means the MX6635b is just the right size to carry in most bags, unlike unwieldy 17" notebooks. Gateway has even been kind with the chassis – a good mid-range silver job, with cleverly positioned ports and a smattering of class. It's not built for modern gaming, with the Intel 915 providing the grunt, but if there were ever a chipset we'll never tire of, it would be that one.

The real problem now is that the industry is going to try and compete with this level of performance and price, and we're going to wave goodbye to a few of our favourite manufacturers as they throw all their money away in the process. Until then, bask in the glow of one of the best value laptops we've seen. It's worth every penny.

Alex Cox

Processor Pentium M 1.73GHz

Chipset Intel 915

RAM 1,024MB

Hard drive 100GB

Weight 2.8Kg

Warranty One year parts and labour

91% **PCF says...** "A fantastic laptop for the price of a bad one. Great value."

gold
PCFormat





**"The FX-60
manages to
outdo its rivals
on every count"**

DUAL-CORE POWERHOUSE

AMD Athlon 64 FX-60

Gather round, high-end chipset enthusiasts: you're not going to believe how this chip could change your life

Price £709 Manufacturer AMD Web www.amd.com

You should probably sit down for this, and put that credit card away too – who knows what damage it could do on an impulse? AMD has done it again. It's released another super-fast CPU guaranteed to get the fanboys foaming at the mouth and reaching for the piggy banks. Ladies and indeed gentlemen, we have for your delectation: the AMD Athlon 64 FX-60.

NUMBER CRUNCHER

The FX range has always offered enough extra grunt to make it a sought-after, regardless of the price. The FX-60 maintains this tradition. The move to an even-numbered suffix also ushers in the transition to dual-core architecture, and sidesteps the much anticipated single-core FX-59 running at 3GHz. Don't be disappointed though: cramming another core under the svelte heat-spreaders is a good move, and long overdue.

The FX-57 was chomping up the competition when dual-core chips were all the rage, so what has changed? As of right now, only a little to be honest, but the future is beginning to look far less dual-core phobic. NVIDIA and ATI's new dual-core optimised drivers certainly help

the cause, while patches for *Call of Duty* 2 and *Quake IV* are also dispelling the concept that two cores are bad, and one is good. At least as far as hardcore gamers are concerned (normal bipeds should have realised the benefit of multi-threading by now).

Running at 2.6GHz, this is effectively the Athlon 64 X2 4800+ overclocked by 200MHz faster, so it's a sort of 5200+, if you will. You get the same 2MB of L2 cache shared between the two cores and the integrated 128-bit dual-channel DDR400 memory controller, and it uses the standard socket 939 processor socket, so you can use it with the slew of increasingly affordable and powerful motherboards already out there after a BIOS update too.

This is a mighty powerful chip, too. The 4800+ was the leader of the pack for nigh-on-everything except the odd

game, and the FX-60 manages to outdo its nearest rival on every count. This is as elegant as processing currently gets. It's cool running too – something that can't be said for Intel's latest Extreme Edition chip (soon to be phased out).

This is clearly a considerable amount of money for something as minuscule as rarefied sand. However, if you're not one to look at bank balances before spending £600 on your PC, or you already have a pair of 7800GTs that need a big processor to match, or you just need the fastest chip out there, then the FX-60 is for you. **Alan Dexter**



Socket 939-pin

Core layout Dual core, integrated memory and I/O controllers

Clockspeed 2.6GHz

Cache 2 x 1MB L2

Execution pipeline 12 stage integer, 17 stages floating point

Recommended chipsets NVIDIA NFORCE4, Radeon Xpress 200

Power rating 110W

84% PCF says... "An awesome chip, but the price will put it out of the reach of most mortals."

BENCH MARKS	DOOM 3 800x600 4 x AA, 8 x AF	WMV9 ENCODE (min:secs)	HI-DEF DECODE (CPU load)	SISOFT SANDRA Floating point performance
ATHLON FX-60	154fps	2:09	22%	53,997
ATHLON FX-57	137fps	3:49	44%	28,989
P4 D 850 EE	94fps	3:09	12%	61,956

ROUND-UP

MEMORY MASTERS

RAM is the cheapest and easiest notebook upgrade you can perform. Simon Pickstock arranges a SODIMM-off...

HOW WE TESTED

For this test we used a Fujitsu Siemens laptop, with 512MB of DDR2 RAM, and an NVIDIA 6800Go graphics card. The set of benchmarks was repeated for each brand of third-party memory. For pure performance, two throughput tests were run using SiSoft Sandra; one which tests pure memory

throughput and one which measures the cache and file-system throughput. For gaming we used 3DMark and a Quake IV timed demo. All brands have the same latency (CL4) and all benchmarks were run at the same settings. Each benchmark was run three times and the best figure for each recorded.

Not that long ago, laptops lacked the basic capacity to play games, let alone take advantage of the cutting edge in memory technology. But how the mighty desktop has fallen, with sales of laptops reaching new heights. The latest laptops are no longer power-hungry beasts, with all the grace of a stoned rhino, but rather packed with the latest technological goodies to ensure that your gaming experience is fit to rival that of your desk-bound mates. The first step was equipping notebooks with mobile versions of über-powerful

graphics cards, while the most recent has been DDR2 memory. For the time being this is still firmly Intel territory, but this is no huge disadvantage, as there are few AMD-powered gaming laptops on the scene currently.

DDR2 was first used on graphics cards, but now prices have dropped and availability has increased, more and more laptops are incorporating it. If you already own a laptop and it's not exactly well endowed in the RAM department, then adding more is a sensible option, if only to make using Windows XP bearable. The absolute minimum you should consider is 512MB, while a whole gigabyte will do very nicely. Going above this gives fewer advantages. If you're in the market for a new laptop, then find out what brand of memory is fitted and ensure you get as much as you can afford. Don't expect miracles though. Unlike a PC, few laptops have a BIOS that allows changes to memory timings, so you're not going to be able to push your system to the limit. However, by choosing the right SODIMM, you may well give yourself the performance advantage you're looking for.



Buffalo 512MB

Manufacturer Buffalo Technology [Web](http://www.buffalotech.com) www.buffalotech.com

£25

At around £10 cheaper than the competition (or more, in the case of the pricier contenders in the test), Buffalo definitely comes in first for the budget choice. Is it worth buying though? Well, it fared better than the Samsung memory that was supplied with the laptop on the memory throughput tests, but scored less on the cache test. So,

you're unlikely to see much improvement in Windows. On the games front, results were among the lowest, scoring the least in *Quake IV* and second to last in 3D mark. Not one for the performance-minded, but definitely the cheapest way to upgrade. Were this a school report, the Buffalo would get a C+ for its efforts.

Sandra Integer memory test 3044MB/s

Sandra floating point memory test 3033MB/s

Sandra cache & memory 4790MB/s

3DMark 04 3507

Quake IV 73.4fps

75% **PCF says...** "More RAM will offer greater performance than less RAM, so while Buffalo RAM may not be high-performance, it's a good cheap upgrade."



Corsair valueRAM 512MB

Manufacturer Corsair [Web](http://www.corsair.com) www.corsair.com

£35

When we see the word value, we cynically tend to swap in the words "less performance". In the case of the Corsair RAM, this is somewhat true. Although it does have better throughput than the fitted Samsung RAM, like the Buffalo RAM, it falls down on the file and cache system performance. This again means Windows performance will be

slightly worse than when using the laptop's supplied memory. Can Corsair redeem itself on the gaming front? Well, if it's going to be a let-down in Windows, then it's never going to shine when playing *Quake*, and while it's faster than the original memory, it still comes last when compared to the other third-party brands.

Sandra integer memory test 3039MB/s

Sandra floating point memory test 3033MB/s

Sandra cache & memory 4782MB/s

3DMark 04 3498

Quake IV 74.1fps

76% **PCF says...** "Midrange price, midrange performance. No complaints here, but think carefully about spending the extra tenner for a minimal gain."



Kingston 512MB

Manufacturer Kingston VALUERAM [Web](http://www.kingston.com/ukroot/) www.kingston.com/ukroot/

£34

Unlike Buffalo, Kingston concentrates its business on memory, and we were therefore hoping for some good results. However, like the Corsair, this memory is marketed as the value range, so you shouldn't expect any miracles. The results were certainly better than the both the Buffalo and Corsair memory, but Kingston

isn't exactly going to set your world on fire. While it lags behind the Crucial stick in terms of performance, it does have the advantage of being much cheaper. If your memory is underperforming, or you simply need to upgrade and don't want to spend more than is absolutely necessary, this is just what the PC doctor ordered.

Sandra Integer Memory test 3,041MB/s

Sandra Floating point Memory Test 3,068MB/s

Sandra Cache & memory 4,791MB/s

3DMark 04 3508

Quake IV 75fps

82% **PCF says...** "Good, cheap RAM, that offers better-than-standard performance. A good buy, and it hits the price sweetspot"

Turn over for the winner...



WINNER!**Crucial 512MB**Manufacturer Crucial [Web](http://www.crucial.com/uk) www.crucial.com/uk**£42**

Just looking at the prices, you can see that Crucial either has some extra performance advantage up its sleeve, or someone is having a laugh. Thankfully, in this case, it's the former. Considering that every stick of RAM in this test runs to the same spec – a 533MHz bus and a CAS latency of four – we weren't expecting to see a radical difference in performance. While

fitting the Crucial memory to our laptop didn't suddenly endow it with magical powers, it certainly made enough of a difference to make us sit up and take notice. The figures themselves don't tell enough of the story though; there were intangible benefits too, such as Windows and applications appearing to load faster. OK, so you pay a bit more, but it's well worth the outlay.

Sandra integer memory test 3068MB/s**Sandra floating point memory test** 3075MB/s**Sandra cache & memory** 4929MB/s**3DMark 04** 3531**Quake IV** 77.3fps

90% PCF says... "A considerable performance leap over the competition. If it's extra gaming grunt you're after, this is the high-end choice."

 gold
PCFormat

"It certainly made enough difference to make us sit up and take notice"

Pocket money pages

WE ROUND UP THIS MONTH'S SUB-£100 HARDWARE



Think Outside Stowaway Mouse

Price £60 **Manufacturer** Think Outside **Web:** www.thinkoutside.com

Another month, another tiny travel mouse. We decided to slap this little number with an extreme stress test – office-based *Quake IV* multiplayer – and it didn't impede our railgunning. The movement isn't as smooth as it could be but the overall response is reasonable. That said, with extended use, it may reduce your hand to a twisted claw. We're still not sure why you need this more than a laptop touchpad, but PDA users may appreciate a mouse on longer journeys. A shame, then, that it's so monstrously expensive – a wired travel mouse costs less than 20 quid.

54% **PCF says...** "Stowaway? More like throwaway. Boom boom."



Thrustmaster RGT Force Feedback Pro

Will this chunky wheel hit the skids?

Price £85 **Manufacturer** Thrustmaster **Web:** www.thrustmaster.co.uk

The RGT is a seriously weighty piece of kit, and reminds us of the days of Daytona USA arcade machines, which had to survive years of 'enthusiastic' driving. The pedal set included is similarly sturdy, so it doesn't shoot off under the desk during heavy braking. In fact, the only area to which this quality doesn't extend is the gear stick. While the paddle shifters have a tactile click, the stick feels limp and fragile.

The major benefit of the RGT is the fact that the two analogue paddles below the digital ones mimic the layout of a modern F1 wheel, and allow for the holy grail of gradual clutch control. The truly unhinged can even purchase an extra pedal set for Riverdance moments at 180mph.

Despite an awful clamping system (the solution being to attach it once and never remove it again), the RGT is excellent, especially with hardcore sims such as *GTR* and *GT Legends*. You may, like us, have friends who eschew wheels in favour of joypads, but they're wrong to ignore this beast.

Buttons 10

Axes 5

Rotation 240 degrees

Force Feedback Yes

Interface USB

86% **PCF says...** "Powerful, realistic and sturdy, with some neat features."



Transcend T.Sonic 310 1GB

Price £65 **Manufacturer** Transcend **Web:** www.transcendusa.com

Aimed at the iPod Shuffle like a laser guided, white-seeking missile, Transcend's new MP3 player is small and, dare we say it, rather sexy. Undercutting the equivalent Shuffle by around £15, you plug the T.Sonic into a free USB port and drag and drop MP3 and WMA files directly. Sound is excellent and there's more volume available than you'll need. The unit seems unlikely to break if you throw it down some stairs. Funnily enough, that's probably exactly what you'd want to do with the awful headphones, which are definitely on the spangly side of kitsch.

86% **PCF says...** "Loud, convenient and smartly designed."



V-Tec Pen Drive 128MB

Price £23 **Manufacturer** V-Tec **Web:** www.vtec.co.uk

It's a pen. It's a USB drive. We've had plenty of the former, we've had plenty of the latter, but, until now, the twain have rarely met. V-Tec's hybrid has resulted in a chunky pen which unscrews to reveal a USB port. The width of the USB connector dictates the diameter of the pen, so this is heftier than your average biro. We lose pens as frequently as USB drives, and when the pen runs out we're less likely to try and extricate the ink refill than nip to the stationery cupboard for a biro. At this point, we're left with a USB key shaped like a pen that doesn't work. Not great.

62% **PCF says...** "It's a novelty, if you hadn't guessed already."



Saitek Pro Gamer Command Unit

Price £35 **Manufacturer** Saitek **Web:** www.saitek.com/uk

Imagine, if you will, that some plucky salesman tried to sell you a new steering wheel for your car. This wheel would sit next to your existing one and do the same job, to the point where when you turned your new wheel, the old one would turn with it. When asked about the fact that it costs around four times as much as the one you already own, the salesman's buzzwords would peter out and he would become strangely quiet. Granted, the eight year old in you would be seduced by the interchangeable backlighting, but, let's be honest, you'd laugh him right out of the room.

23% **PCF says...** "For the gamer with everything but sense."



top gear
PCFormat

Saitek A-250 wireless speakers

Brundlefly meets portable audio. The result both weird and wonderful in equal measure

Price £70 Manufacturer Think Outside Web www.widget.co.uk

With big, aluminium tweeters on either side of the unit's 'head' and a down-angled bass cone on the underside, the A-250 looks freakish. Thankfully, Saitek hasn't skimped on quality, either: the A-250 puts out a sound that belies its squat dimensions. It's clear and crisp, with a respectable bass output. You can hook up any MP3 or CD player for tunes on the move. It goes in a rucksack with minimal fuss, too.

The real innovation is its wireless transmitter, which you can hook to your PC's USB port. No drivers required; simply plug the thing in, fire up any other media player, and you can play tunes with the A-250 up to 30 metres away. You can't switch between playlists, but if music is important to you, and you have a lot stored on your PC, it's a worthy purchase. Our advice? Wait until they come down in price a bit, and bag one.



XPS 2.140

Price £35 Manufacturer Hercules Web europe.hercules.com

You would be hard-pushed to find a cheaper set of speakers, replete with a subwoofer, than this set from Hercules. The big problem comes when you start sacrificing quality for price, but on first glance the elegant little speakers look just the job. They have a nice metallic finish, are surprisingly sturdy and can be wall-mounted. They pump out a surprisingly rich sound too.

The only issue with this set is the sub itself. The finish is a little shoddy and the bass knob turns like it's going to screw off. More worryingly there ain't much bass to be heard. Still, for desktop use you won't feel its loss too much.



TravelSound 400

Price £45 Manufacturer Creative Web uk.europe.creative.com

The big selling point of this speaker set is the 35 hours of music playback, easily outstripping the various MP3 players that are likely to be attached to it. The sound is nice and rich as well, offering a surprising amount of bass for such a small thing. Pick it up and you can really feel the vibration through the chunky stand. It's reassuringly solid as well, with the heavy base and rubber feet keeping it stuck to the desktop.

The panel on the front is simple, and the rest of the unit is similarly minimalist and well thought out – especially the swivelling head that protects the speaker cones when shut.



Long term test

RATINGS BEYOND THE WARRANTY



Logitech MOMO racing steering wheel

We've had our ups and downs, me and my MOMO. On the one hand, having experienced the joy of physically wrestling a straining rally car around a thin ribbon of gravel, I realised that I could never go back to a joypad for my petrolhead fix. Then again, I didn't realise Logitech's peripheral would introduce me to the other side of motorsport: the part where you're up to your armpits in grease and carburettor parts. The wheel boasts chunky design (thanks in part to the expertise of Italian company Momo, which supplies Schumacher with wheels), superlative force feedback and even little touches such as the brake pedal providing more resistance than the accelerator. Problems arose after extended use, when I suddenly found that even with the pedal to the metal, I wasn't achieving full acceleration. A quick Google revealed that there was a flaw with the pedal, and, rather than asking Logitech for a new set that would only suffer the same fate, I decided to get my hands dirty, following a useful guide on the internet (web.axelero.hu/mozso/momo_e5.html). One roll of sellotape and a warranty-busting repair job later, I was back on the track and enjoying a fantastic piece of hardware. **Mike Channell**



Ammo RC-533

Price £55 Manufacturer Cooler Master Web www.coolermaster-europe.com

You can tell this case was designed for LAN parties by the serious rubber handle on the top. The case itself is sturdy, and inside you enter a mercifully screwless world of slots and clips. The best of these bonuses is the HDD brackets, where you slot guides into the side of your drive and slip it into the housing with a satisfying click.

The only slight problems are aesthetic ones, which can be forgiven on personal tastes. For us, the clip-on front is a bit too plasticky and the missile silo-esque power and reset buttons on the top are just plain naff.

70 % PCF says... "Good speakers, shame about the woofer."

81 % PCF says... "Well designed speakers with great clarity."

76 % PCF says... "A sturdy case with an unfortunate front panel."

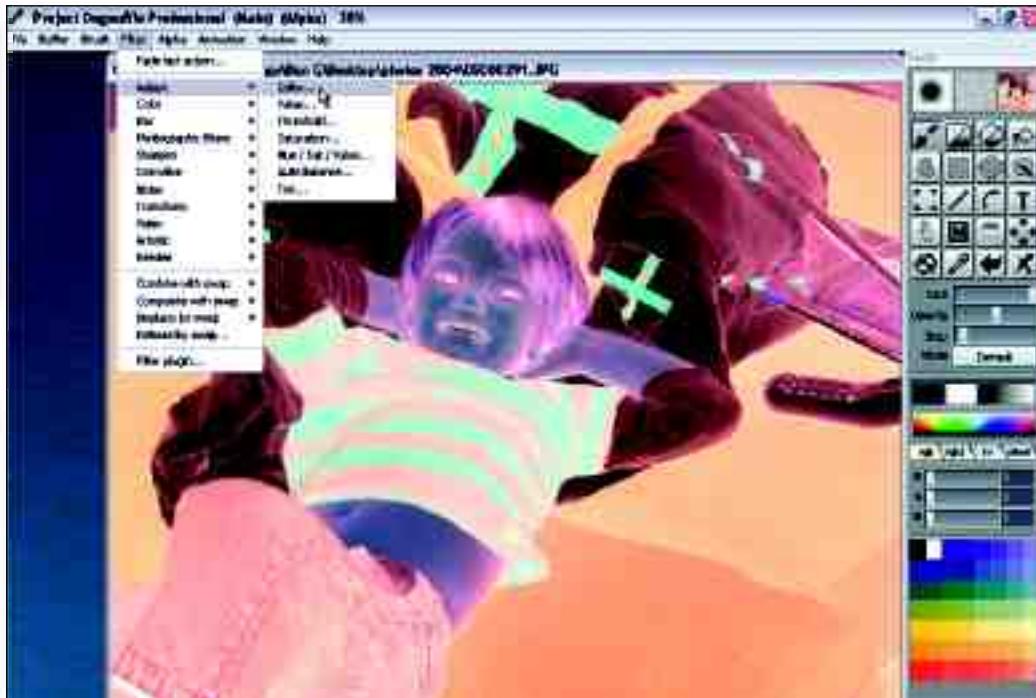
We want your reviews... of still-loved old kit: al.bickham@futurenet.co.uk



Natural brush tools – particularly airbrush and watercolour – get you started quickly.



The introductory videos will prove useful to anyone who's new to image editing.



Turn your son into Satan – the program is also great for editing and manipulating photos.

BETTER NAME REQUIRED

Project Dogwaffle

A likeable mass market paint program, with impressive natural media effects and brush tools

Price £60 Manufacturer FastTrak Web www.fasttrak.co.uk

Whoever thought up that contrived, 'it's not corporate, it's fun' name should be slapped, but don't let it put you off – *Project Dogwaffle* is a remarkably powerful painting and image editing program that's great value. *Dogwaffle* is the brainchild of Dan Ritchie, a top Hollywood animator who worked on *Spider-Man 2*, and he's put his experience to good use. The program manages to be as straightforward to use on a basic level as *Paint*, but packs in a lot of the power of Corel's *Painter*, without the overwhelming complexity. That said, *Dogwaffle* still requires some study (as with most drawing and painting programs) and we strongly recommend you sit through Ritchie's introductory videos. You need to squint to follow the mouse and concentrate to decipher his West Coast drawl, but it's well worth it.

BRUSH AWAY

What's immediately impressive about *Dogwaffle* is the sheer number of brushes available, and how easily they can be customised, to an almost obsessive degree. Simulating pastels, oils, watercolour, airbrush, pencils and

YOU SHOULD ALSO CONSIDER...

- » **Corel Painter**
Corel
- » **Adobe Photoshop**
Adobe
- » **PhotoArtMaster**
Fo2Pix

pens is straightforward, and you can automatically replay brush strokes by pressing a key. Even better, 'particle' effects can be painted, including fire, smoke, and waterfalls.

Cheaper paint programs can end up creating 'muddy' effects, but *Dogwaffle* gets around this by managing layers of paint separately. Another strong point is the colour management: simply mix colours with an artist's palette or drag and drop to create gradients. The texture and pattern of the 'paper' can be changed as well, with the paint reacting differently to each kind of media. Plug in a graphics tablet and the results will improve exponentially.

The brushes can be animated, too, so you can paint directly onto video, while multiple brushes can be manipulated simultaneously – whether you'd actually want to do this is a moot point. The program should be useful to video artists, without breaking the bank.

As well as powerful painting tools, *Dogwaffle* is handy for editing photos. It's got a useful selection of image

correction tools and filters, ranging from the sublime to the ridiculous. Photos can obviously form the basis of a painting project too, though if you're after a program for adding artistic effects to images, you'd do better with a dedicated package, such as *PhotoArt Master*. So *Dogwaffle*'s a faithful friend, but will it win best of breed? While the tools and image format support are superb, the interface could be more intuitive; a lot of key functions are buried in menus, right mouse clicks and keyboard shortcuts. The manual's perfunctory too, forcing you back to the videos. *Dogwaffle* has the potential to be the *Photoshop Elements* of paint/natural media software but it's not transparent enough yet, and belies its heritage. The next version could well crack it though, and it's a revelation for those of us who've utterly exhausted *Windows Paint*.

Geoff Harris

"Dogwaffle is the brainchild of a top Hollywood animator"

top gear
PCFormat

Needs 500MHz CPU, 256MB RAM

Wants 1GHz CPU, 500MB RAM, graphics tablet

85% **PCF says...** "Keenly priced, powerful alternative to Corel Painter and esoteric pro tools."

RADIO ACTIVITY

RadioTracker

Catching the latest music stream online

Price £20 Publisher Avanquest Web www.avenquest.co.uk

How futuristic are you feeling today? Not so much? *RadioTracker* is the internet equivalent of taping tunes you like off the radio. In a trendy mood? *RadioTracker* is home taping 2.0. Choose your poison.

It works simply and effectively. Pick a genre of music you like, and it hooks up to as many Shoutcast stations as your bandwidth can handle, simultaneously downloading each stream and chopping it up into MP3s. It adds a fade-out at the end of each, and



inserts what metadata it can (artist and track name). More interestingly, it can use this information to only download specific tracks and artists, saving you from a Sorcerer's Apprentice style music folder if you leave it on overnight. Another saving grace is being able to limit how much disc space recordings will consume.

Which leaves the question of legality. *RadioTracker* claims it's legal, but the music industry is still the music industry. We doubt you'll have problems – it's not file-sharing – but keep an eye on it for the future.

Richard Cobbett

Needs 1Ghz CPU, 128MB RAM, internet connection

Wants Same, with Broadband and lots of disk space

84% **PCF says...** "Excellent! simple, simply excellent. Simple. Excellent."



STREAM ENGINE

Magix WebRadio deLuxe

This is 'deluxe' as in 'the only edition'

Price £20 Publisher Magix Web www.magix.com

One of Magix's sturdiest releases of late; *WebRadio* is a suite of tools, with a fairly obvious target – it's going to be far more exciting if you think "Wow! I can listen to radio on the web!" than "How will this help me listen to radio on the web?"

At heart, it's a mix of two programs, *Magix Music Manager*, which is much like *iTunes*, and *WebRadio*, which is much like clicking the Radio button in *iTunes*



(or to be more accurate, in *WinAmp*). The big difference? This one records too. There are both timer and timeshift options, and it's easy to page through a particular tune to get to the bit you want – with the bonus that everything slots straight into *Music Manager* rather than splitting your effort across other programs.

In addition to the radio, you also get the obvious audio CD burning, the more advanced DVD burning, and a handy automatic backup system. **Richard Cobbett**

Needs 600Mhz CPU, 128MB RAM, internet connection

Wants Same, with broadband and lots of disk space

86% **PCF says...** "A strong set of tools, for web radio and beyond."



COMPRESSION THERAPY

Winzip 10.0

Zippy it may be, but is a compression program worth a full price purchase?

Price \$50 Publisher Winzip Web www.winzip.com



Now, come on, be honest – can you say with hand on heart that you don't have *Winzip* (or at least one of its rivals) blinking a sad little 'Please register!' symbol that would make Scrooge turn over a new leaf on a daily basis? Well, here's your yearly chance to atone for that sin. Sorry, you've missed Christmas.

PROFESSIONAL EDGE

There are two versions of *Winzip* 10 available: Standard and Pro. Standard isn't particularly exciting. Files go into zips. Files go out of zips. It integrates pretty well with Windows, this version has slightly better compression (it says here – although in these days of billion GB hard drives, it doesn't make a great deal of difference), but by and large, it's what you'd expect. As before, you get novice and expert modes of operation, and the ties to the Windows system are as good as ever. The basic *Winzip* format is easily the most convenient to use out there, partly because it's a good format in its own right, but mostly because Windows XP supports them out of the box (if you've ever used a Compressed Folder, you've used a ZIP), ensuring you can mail them around to everyone under the sun without worry about if they have *WinRAR*, or whatever else.

However, *Pro* goes quite a bit further. Rather than simply handling files, it's made a push

towards being a dedicated backup tool – scheduling fresh backups of your most important directories (with the choice of whether to grab everything at once or simply the different bits, as well as being able to distinguish between, for instance, C:\Program Files\ and the Windows flag that tells it where your program files are stored), and either holding them somewhere on your computer system, or spitting them up onto an FTP site. These are just plain ZIP files, so they can be passed around, password protected, and dealt with just like anything else – as well as being split up into pieces, burned straight to CD/DVD (a new feature for *WinZip* as a whole), and date information either appended or left off as you deem necessary.

This is a useful new feature, not simply ensuring that your data is properly backed up, but doing so transparently and in a format that isn't going to cause you any trouble – one reason for buying a copy of *WinZip*, even if you wouldn't have considered doing so just to get rid of the little message on startup.

Richard Cobbett

Needs Pentium, 64MB RAM, Windows 98 or above

Wants Pentium 4 CPU, 256MB RAM

90% **PCF says...** "A solid reason to leave that old evaluation copy behind."

ROUND-UP

Need more space online?
Gary Marshall discovers the web hosts with the most

Choosing a web host is difficult. Shared hosting or dedicated server? Windows or Linux? For most people, shared hosting is cheap, reliable and more than adequate, while the choice of platform depends on the tools you like to use. If you're into ASP then go for Windows; if you want to use MySQL, go for Linux, and if you wouldn't know ASP or PHP if they pressed their buttocks against your living room window, then go for whichever's cheapest.

SUPPORT SERVICES

One of the biggest issues isn't technical at all – it's what support the firm offers. 24/7 support is good, but make sure it means the phone lines or Instant Messenger services are manned 24/7; some firms believe that having a help page available all day and night counts as round-the-clock support. It doesn't. Over the next two pages we'll discover what's on offer, what you should pay and what you should expect for your hard-earned cash.



Make sure that your web host offers support, as well as a bargain.

THE POPULAR CHOICE

1&1 Business

Lots of space and lots of goodies, but its billing system is strange

Price £8.44 per month Manufacturer 1&1 Web www.oneandone.co.uk



This provider is a regular winner in Future Publishing's annual website awards, and while we hate the way it twists the English language – there's "no setup fee" but you have to pay the first six months up-front – we've got to admire the



1&1 is clearly going for hosting beginners in addition to web space you get lots of free software and a stack of beginner-friendly tools.

sheer amount of stuff you get for your cash. The Business package gives you 2.5 gigabytes of space, 10 FTP accounts, 20GB of monthly traffic and a decent online control panel with the usual statistics, but 1&1 also bundles a huge pile of online tools and downloads.

ADDED EXTRAS

So what's in the bundle? You get a copy of the *NetObjects Fusion* HTML editor, *PhotoImpact XL SE*, *Hello Engines!* and various programs for FTP, media viewing and image browsing. However, the online tools are more interesting. In addition to the usual site-building tool you can also add in2site live chat (a kind of web-based instant messenger for talking to your visitors) or up to five real-time chatrooms, and you get tools for creating forms, newsletters and databases.

Tech support is provided via a help section, and there's 24-hour email and phone lines too. You can also use the free *NetViewer* software to have an

BILL'S HOST

Fasthosts Windows Pro

A wide range of features, and no data transfer limit

Price £9.38 per month Manufacturer WebFusion Web www.fasthosts.co.uk



Fasthosts boasts that it's the world's largest Windows 2003 web host, although it offers Linux site space as well. The Windows Professional service delivers lots of goodies for £7.99 per month (plus VAT).



Like many hosts, Fasthosts lists its prices without VAT, and you'll need to pay the first three months up-front.

It offers two gigabytes of web space with unlimited data transfer, although the firm reserves the right to crack down if you're attracting Amazon-sized visitor numbers.

All the essentials are covered: visitor statistics, raw log files, ASP, ASP.NET 1.1, PHP and CGI scripts, ODBC database access, FrontPage extensions and an online site building tool. You also get 600 email boxes (five of which can be protected from spam and viruses), webmail, secure SSL web space, protected folders and up to 200 subdomains. Five FTP accounts are included, which means you can let others upload via FTP without worrying that they'll trash parts of your site.

EXTRA FEATURES

Add-ons include Windows Media streaming for £5 per month, credit card processing, virus and spam-protected mailboxes and *Exchange 2003* support. There's also a nifty SMS text messaging feature, which costs 25p per message.

instant messaging chat with a 1&1 employee, although you'll need to phone support first to get a job number.

It's useful if you're new to site building, but we have to dock points because of the way 1&1 presents its prices. You won't find out until you're halfway through ordering that 1&1 works in six-month chunks, so you'll have to shell out for half a year's hosting on day one. We'd rather have the choice between monthly and annual payments. If you don't mind paying up-front then you do get an awful lot of goodies.

Support types Email/phone/chat (via NetViewer software)

Signup cost Six months' payment up-front

Cost per month £8.44

Annual cost £101.38

Other benefits 60-day guarantee

82 % **PCF says...** "Lots of goodies but six-monthly billing is a pain in the backside."



WebFusion Professional

Price £11.69 per month **Manufacturer** WebFusion

Web www.webfusion.co.uk

This gives you 2.5GB of space and a 20GB data transfer limit, and there's full support for ASP, ASP.NET 1.1, PHP and CGI. There's also a free .uk domain name, a £50 Google AdWords voucher and 300 email inboxes

WebFusion also provides a round-the-clock telephone helpline and email service. There's also a 30-day money-back guarantee if you're not satisfied.

It's not the most exciting service we've seen, and it's not the cheapest either. However, it's what you'd expect from Pipex – a solid, sensible service that concentrates on getting the job done rather than offering stacks of features you'll never use.

Support types Email/phone

Signup cost N/A

Cost per month £11.69

Annual cost £117.44

Other benefits 30-day money back guarantee; no need to pay for several months in advance

83 % **PCF says...** "It's business as usual for Pipex: a solid and sensible service."



Easily Super Virtual

Price £97.23 per year **Manufacturer** Easily

Web www.easily.co.uk

Easily's Super Virtual Account comes with 500MB of web space on a Linux server but no bandwidth. Instead of a monthly data transfer limit, you buy bandwidth as you need it. The minimum purchase is 5GB, which Easily suggests is adequate for 5,000 visitors per month over an entire year. There's no web-based file manager, although you do get FrontPage extensions, PHP, Perl, MySQL and ASP. Email accounts cost extra, and if you want a secure SSL server you'll need the more expensive Super Plus Virtual service. You do get phone and email support, but Easily's support team works office hours (8.30AM to 6PM, Monday to Friday) which is not very useful if your site suddenly packs up on a Saturday afternoon.

Support types Email/phone

Signup cost N/A

Cost per month N/A

Annual cost £97.23 (includes first 5GB of bandwidth)

Other benefits N/A

52 % **PCF says...** "It's not great value, and tech support's limited to office hours only."

If you've already got a domain name, Fasthosts can transfer it to your web space, and if you haven't you can order one during the sign-up process.

Fasthosts promises round-the-clock support by email and phone, and there's a decent help section on its website too. Watch out for the security policy, though: Fasthosts won't transfer domain names to another registrar until 60 days have passed, so you might prefer to keep your domain name separate until you're happy with Fasthosts' service.

Support types Email/phone

Signup cost Three months up-front if you pay on a monthly basis

Cost per month £9.38

Annual cost £103.27

Other benefits 30-day money back guarantee; no data transfer limit

91 % **PCF says...** "Decent support and more bandwidth than you can shake a stick at."



Supanames Windows Start

Price £46.98 for two-year contract

Manufacturer Supanames **Web** www.supanames.co.uk

This offers a free .uk domain name, 500MB of server space and a 2GB monthly data transfer limit. It supports ASP, ASP.NET, CGI, PHP, MySQL and ODBC, and the package includes 500 email inboxes and anti-spam protection.

You can have up to five subdomains and as many password-protected subdirectories as you'd like, and you can run up to five MySQL databases. The package also includes a free voicemail, call forwarding, and you get 24-hour phone or email technical support.

If your priorities include lots of free software and online wizards then Supanames isn't for you, but if you want some heavy-duty hosting without a heavy-duty price tag then it should definitely be in your shortlist.

Support types Email/phone

Signup cost N/A

Cost per month N/A

Annual cost £46.98 (for a two-year contract)

Other benefits Free voicemail and call forwarding

88 % **PCF says...** "Excellent value for money if you can stay within the 2GB monthly data transfer limit."



Strive Hosting Business

Price £33.48 per year **Manufacturer** Strive

Web www.strivehosting.com

Strive promises free hosting for life if you can find cheaper prices elsewhere, which is quite a claim, when you think about it. While Strive's price point is certainly low – £33 a year for 15GB of space and 300GB of bandwidth sounds like a good deal on paper – we've yet to be convinced that it's worth parting with our cash. The problem is that Strive is a reseller of a service from Hostcentric in the US, rather than the physical owner of the service. Which means you're going through a middle man for all your dealings – including, importantly, support. The Strive deal also purports to include "unrestricted bandwidth", but it's capped (albeit at 300GB). A sure sign that you should read the small print before signing up for any hosting service.

Support types Web/phone

Signup cost N/A

Cost per month N/A

Annual cost £33.48

Other benefits Guaranteed tech support within one hour

63 % **PCF says...** "You can't argue with the package, but be wary of the bolder claims."

"TOCA Race Driver 3 is fat with motoring goodness, and eye-wateringly fast, too"





high
score
PCFormat

The daunting Eau Rouge corner has been the site of many high-speed accidents, both real and virtual.

POWERSLIDE CENTRAL

TOCA Race Driver 3

It may not be the prettiest, but then we're always told looks aren't everything. Perhaps it has a nice personality?

Price £35 Publisher Codemasters Developer In-house Web www.codemasters.co.uk/games

For a while it seemed the TOCA series had the racetrack all to itself. The odd F1 simulation would sometimes zip past, granted, but in terms of licensed Touring Car or GT racing, there was very little competition. When *TOCA Race Driver 2* was released, over a year and a half ago, it was just about the only option for PC petrolheads, but since then something important has happened. That something is *GTR*, a gloriously pedantic take on the driving game that enjoyed no small degree of success. The game raked in enough cash to spawn an historic racing spin-off, *GT Legends*, which received an equally warm reception. *TOCA*'s position on the top of the driving game podium is under threat. *TOCA Race Driver 3*, therefore, had better be an emphatic statement.

START YOUR ENGINES

The difficulty with this kind of comparison, though, is that *TOCA* isn't just a PC game, it's a *multi-format* game. In *TOCA 3*'s case this is something of a double-edged sword. With the

competition in the console market, just having a few tracks and a handful of cars simply won't cut it against the wealth of content in, say, *Gran Turismo 4*. Equally, ponderously slow Mini races won't stand up next to the blistering pace of the *Burnout* games. You will be pleased to hear, then, that *TOCA 3* is fat with varied motorsport goodness and eye-wateringly fast.

However, the Gods of simultaneous development giveth and, rather predictably, taketh away. In *TRD3*'s case, obvious graphical concessions have

ON THE DVD

>> Playable demo



BUY THIS IF YOU LIKE...

>> *GTR*

Atari

>> *GT Legends*

Atari

>> *rFactor*

ISI

Terminal velocity

The anatomy of a crash



The first corner at the Belgian Spa-Francorchamps circuit is a tight hairpin and is the perfect place to watch out for AI screw-ups. In this picture the computer controlled car has clattered into the wall. Should your own car get too damaged, wheels will dislodge and engines will start to smoke. This also applies to online games, but watch out, as taking other people out is the quickest way to lose friends.

been made to accommodate aging consoles. There are some pretty effects on show, but overall there hasn't been enough of an improvement since the previous iteration.

One of the new features of *TOCA 3* is the choice between playing the game in Sim or Pro-Sim mode. Sim is aimed at the more casual player; the cars are all but bolted to the circuit and drive like laser-guided missiles. Pro-Sim, by contrast, is for the *GTR* junkies, and is much more realistic – the cars here handle like a bag of angry rats.

BRUISE CONTROL

After a brief introduction which throws you in at the deep end in the ultra-competitive German Touring Car series, there are two options available to further your career (and unlock the really desirable motors). The first is the World Tour mode. Similar to Career mode in *TOCA Race Driver 2*, the World Tour is laid out as a series of tiers with short championships that give you a flavour of the different racing styles available. One thing that does seem to have been



The German DTM series is one of the most fiercely competitive in the world.



Ah, the mighty, oddly balletic grace of monster truck racing. Memories of Saturday morning TV from the Eighties flooding back? Us too.

dispensed with is the storyline. Once the defining aspect of the *Race Driver* series, the cutscenes have become more of a school play than a soap opera. There are some convincing stabs at scene setting: Rick, your trusty mechanic, often imparts some genuinely useful tips about whichever high speed steed you are about to strap yourself into. Those looking for pit-lane punch-ups of previous *Race Driver* games, however, will be somewhat disappointed.

Should you have your eye on unlocking one particular discipline of racing, the second option, Pro Career, is

a far more efficient way to progress and unlock the cars you actually want to drive. It is also where you can customise the championships to your own maniacal bent; if you want to race a season of full length, 200 lap Indycar races, this is the place to fulfil those niche desires.

CHEQUERED PASSED

One thing is common to both modes, though. The deeper you get into the game, the faster and more fun the cars become to drive. That first time that you get your hands on the frankly barmy Ultima GTR class and drive around the outside of a competitor at speeds approaching that of sound, all your misgivings about the rudimentary graphics will sail straight out the car window like so many empty crisp packets. Not only that, but the engine noise of these monsters complements the sensation of speed perfectly. You can hear every pop of backfire, every clunk of the gear stick and the marriage of engine roar and gearbox whine is as convincing as any we've ever heard. Simply put, the cars in *TOCA Race Driver 3* feel like they are racing on the absolute limit, something few games seem to achieve.

Of course there's nothing exciting about a procession of cars, no matter how fast they are going (just ask your average F1 fan), and thankfully *TOCA 3*'s AI is something pretty special. We've seen too many racing games where the computer-controlled drivers timidly wait for you to spin off in a flurry of tire smoke before they pluck up courage to

Time for a test drive

TOCA's showroom is packed to the gills with auto-erotica



1 This keen little fella is the Ford Falcon, driven by the 2005 V8 Supercars champion, one Russell Ingall. The unashamedly bonkers Aussie racing series is a late night televisual treat, and is marked out by wildly varying driver talent and some of the most demanding racing circuits on the planet.

2 The German DTM Touring Car series is where old (sorry, 'veteran') F1 drivers, such as flying Finn Mika Hakkinen, go when they can't fit in the tiny cockpits any more. Two giants of the German car industry, Mercedes-Benz and Audi, clash on-track, usually with spectacular, warranty voiding results.

3 The flagship of *TOCA Race Driver 3*'s impressive fleet is the BMW Williams FW27, which contested the 2005 F1 World Championship at the hands of Mark Webber and Nick Heidfeld. The car is ridiculously swift and grips the asphalt like a velcro-clad mountain goat.

UP CLOSE CRASH COURSE



overtake. Not so here; if one of the AI drivers spots a gap, particularly on more difficult settings, they'll lunge suicidally for it, often using a bit more of the race track than is entirely fair or sensible. On some occasions, and we're not entirely sure if this is intentional or not (arguably the mark of good artificial intelligence), they will even give you a cheeky little nudge, in an attempt to disrupt your concentration and alter your line in a braking area.

Brilliantly, though, you have the opportunity to give as good as you get. If you find yourself in a heated battle with one of the AI cars, there is every possibility that the computer will overcook it at a corner and go skittering across the nearest gravel trap. Better still, it is not uncommon to find a computer car rejoining after a mistake that had nothing to do with you. They are little touches, but they do a great deal to convince you that you are racing against personalities as opposed to a processor.

Should racing the computer not inflate your tyre, so to speak, TRD 3 has a solid multiplayer mode where race hosts should be able to tweak to their hearts content. Flag rules, the severity of punishments and the complexity of the physics model can all be modified,

and up to 12 players can swap insurance details online using any of the unlocked bonus championships.

DAMAGE REPORT

TOCA Race Driver 3 is certainly not all that was promised. The damage engine, for example, is nowhere near the revolution it claims to be. Not only that, but it doesn't even apply to some of the vehicles; smack an Indycar against a wall at 200mph and you



Grease monkey

Meet Rick, your chirpy Scottish mechanic



Throughout your racing career you will find yourself jumping between cars and championships more quickly than a frog on a griddle, so you're going to need a bit of guidance. Rick turns up both in World Tour cutscenes and over the in-car radio. His job is to inform and remind you of important things such as mandatory pitstops and whether your car has been damaged by your latest altercation with the wall. Post-race, he'll chastise or congratulate you depending on the strength of your performance.

should be wearing your buttocks as ear muffs, but instead you are free to limp back to the pits for a tune up. The new physics may appease the game's target audience, but it probably won't satisfy them; there is nothing like the subtlety of Simbin's efforts to be found here. The graphics, outside of the more heavily textured cars, look barren and bland and the console-centric polygon budget is clear to see. This may seem like a laundry list of (entirely relevant) complaints, but you should look past them, because most are cosmetic, and none of them matter much when you are in the thick of the pack. Thanks to the volume of content and the spectacular AI, the majority of races, are an joy to play. TOCA Race Driver 3 may not be the best driving sim on the PC, but it is one of the best racers.

Mike Channell

Needs 1.4GHz CPU, 256MB RAM, 32MB 3D card

Wants 2.4GHz CPU, 512MB RAM, 128MB 3D card

Net gaming 12 players online and via LAN

Discuss pcformat.co.uk/mag/tocarace3

88% **PCF says...** "Not quite the looker we'd hoped, but it is blisteringly fast."

ONLINE RACER

rFactor

A set of wheels that are rEvolutionary

Price £30 Publisher ISI Developer In-house Web www.rfactor.net

What do you expect when you buy a racing game? TOCA Race Driver 3 includes almost every form of motorsport under the sun. GTR, on the other hand, picked a single discipline and simulated it to the point where the length of the driver's toenails probably had an effect on the handling. It is in this tradition of diversity that the

ON THE DVD

>> Playable demo



BUY THIS IF YOU LIKE...

>> GTR

Atari

>> GT Legends

Atari

>> F1 Challenge '99-'02

EA

Formula ISI cars are thinly disguised F1 cars, and they go like the clappers.

BUY THIS IF YOU LIKE...

>> Athens 2004

Eidos

>> Ski Racer 2006

JoWood

>> Tony Hawk's Pro Skater 4

Activision

new offering from ISI, veteran developer of EA's F1 sims, carves its own path.

FLOOR IT

The key idea behind *rFactor* is that the technically minded sim-racing community could, with a powerful and modifiable engine, create their own content above and beyond the imagination and budget of any one developer. As a result, when you first download your copy of the game from www.rfactor.net, in-game content is decidedly sparse. The cars and tracks (all of which are fictional, but are clearly 'inspired' by real marques and locations) are simply not the focus; it's the physics engine and the panel-beating fun of multiplayer that defines this game. That's not to say the existing content isn't worth a look: ISI has provided players with a framework which guarantees exciting racing and loads of expansion options.

If you do purchase *rFactor*, you must do so in the knowledge that it requires



None of the cars are licensed, but the quality of the racing makes up for that.

some maintenance (although far less than an average MMORPG, you'll be glad to hear). Modding is this game's raison d'être, and it seems to have been embraced by a community whose devotion is evident in the survival of Sierra's *Grand Prix Legends*, which has been with us since 1998. While we like the concept of a game designed as a toybox for modders, until more content appears, the game is spinning its wheels on the starting grid, while rivals such as *GT Legends* are streaking across the finish line.

Mike Channell

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1.5GHz CPU, 512MB RAM, 128MB 3D card

Net gaming Up to 50 players

74% **PCF says...** "As a game, it's spartan, but as a platform there's clear potential."



SNOW-BOUND OLYMPIC BID

Torino 2006

No need for expensive and disturbingly skin-tight Lycra here

Price £30 Publisher 2K Sports Developer 49Games Web www.2ksports.com/games/torino2006

Joystick manufacturers must rub their hands in glee at the beginning of every Olympic year. They knew that there would be a slew of athletics-inspired games released, all designed to wreck your controller. Thankfully, 2K Sports has opted for a more sedate pursuit of sporting excellence, in this

BUY THIS IF YOU LIKE...

>> Athens 2004

Eidos

>> Ski Racer 2006

JoWood

>> Tony Hawk's Pro Skater 4

Activision

extremely timely crack at this year's Winter Olympics.

SLIPPERY SLOPE

In *Torino 2006*, you can play the full Olympics through all 15 events, or you can create your own competition and choose favourite events to compete in. Whether it's the frankly bonkers luge or the lung-busting cross-country skiing – all the events are here.

The game's not short of problems in singleplayer mode. There is only a single course for each event, so once you've mastered the alpine slopes, your interest will wane rapidly. There are extra challenges for each discipline, like achieving the highest speed on the biathlon course, but these don't give you any bonuses, just a hoped-for glow of satisfaction that never appears. There's no compulsion to better the athletes you're competing against either, as the athletes' real names are missing. This means you just end up battling it out



10/10 for jumping, but minus several million for that outfit.



Would it help if I got out and pushed?

against Computer 4 and Computer 7 for the podium places.

The game gets more interesting once you start competing with your friends, but there's still no online mode and you can only fight it out with four people gathered around your PC. We do love our PCs, but we'll be the first to admit that it's rare to get you and your buddies playing on a single machine – that's console territory. **Dave James**

Needs 1GHz CPU, 256MB RAM, DirectX 8 card

Wants 1.4GHz CPU, 512MB RAM, DirectX 9 card

Net gaming None

55% **PCF says...** "A distinctly limited game with basic multiplayer options and no longevity."



Ever seen swamp gas like that?



For 'RPG' you should read 'click through reams of uninteresting text.'



That's Keysha, one of your immortal guides. She's not much help though...

DISHWATER-DULL FPS

Gene Troopers

Contains the DNA of many games spliced together, but if this is the future of genetic experimentation, count us out

Price £25 Publisher Playlogic Developer TDK Web www.playlogicgames.com

You can just imagine the scene as this game was being put together. PCF pictures a cold operating theatre, covered in green sheets and sharp knives, Danish pastries and coffee. "Right", says one plucky old timer, "if we throw in the best bits from a load of top-selling games, how can we lose?" Everybody nods sagely and stitches up the body, safe in the knowledge of a job well done, and knocks off early.

The problem is, when you take a load of other people's concepts that have already been borrowed by numerous other titles, you're on a hiding to nothing. TDK has nabbed *Half-Life 2*'s gravity gun, *Max Payne*'s bullet time and *Deus Ex*'s RPG elements – all of which have been successfully implemented in much better ways in much better games.

The intro sees your daughter kidnapped by beasties who then experiment with you. Halfway through said efforts to splice you with a gene-nabbing soldier, the futuristic wing of the Animal Liberation Front come in and spring you. Sounds promising. Early levels made us want to take an axe our PC in disgust, as we were forced down

linear routes. We had hoped that the days of traversing corridors where all the doors but one are locked, were over.

HERE COMES THE SCIENCE

Thankfully the game leaves those corridors behind for a bit and you and your new companions escape the clutches of the evil galactic empire. Your two game buddies are awesome; they're totally immortal, for starters. Knock 'em down and they'll get right back up again. We're not entirely sure why they need you around at all, since they seem to be

ON THE DVD

>> [Screenshot gallery](#)



BUY THIS IF YOU LIKE...

>> [Serious Sam 2](#)

2K Games

>> [Halo](#)

Microsoft

>> [Doom 3](#)

id

impervious to weapons and have the uncanny ability to teleport around if you to lose them. Sometimes you'll nip off in a lift a little bit too quickly and they'll get left behind, only to appear right behind you a couple of seconds later.

Much is made of the 'truly interactive' story, which requires you to choose the course of events.

Unfortunately these 'choices' are often jarringly obvious, and in most cases there's no 'choice' to be made at all. For example, once you've spent most of the game searching for your daughter, you then get the choice of either keeping your bionic upgrades and letting her die, or giving them up and keeping her alive. Realistically you're only ever going to kill her to see what happens [You're just evil, pure and simple – Ed.].

Despite aspirations to intelligence, this is comfortably one of the dumbest first-person shooters we've ever come across. The FPS action is stilted, the RPG elements make you want to rip your own still-beating heart out, and the main character sounds like Duke Nukem's halfwit brother.

Dave James

Gene genie

Use the dead and their blue genes



When you kill organic life forms in Gene Troopers, they drop genetic material that you can absorb and then expend by levelling up your different powers. Once you're host to the Seed of Bane, you can spend these points on new superpowers and take on even bigger, more dangerous bads.

Needs 1.8GHz CPU, 256MB RAM, 128MB 3D card

Wants 2.6GHz CPU, 512MB RAM, 256MB 3D card

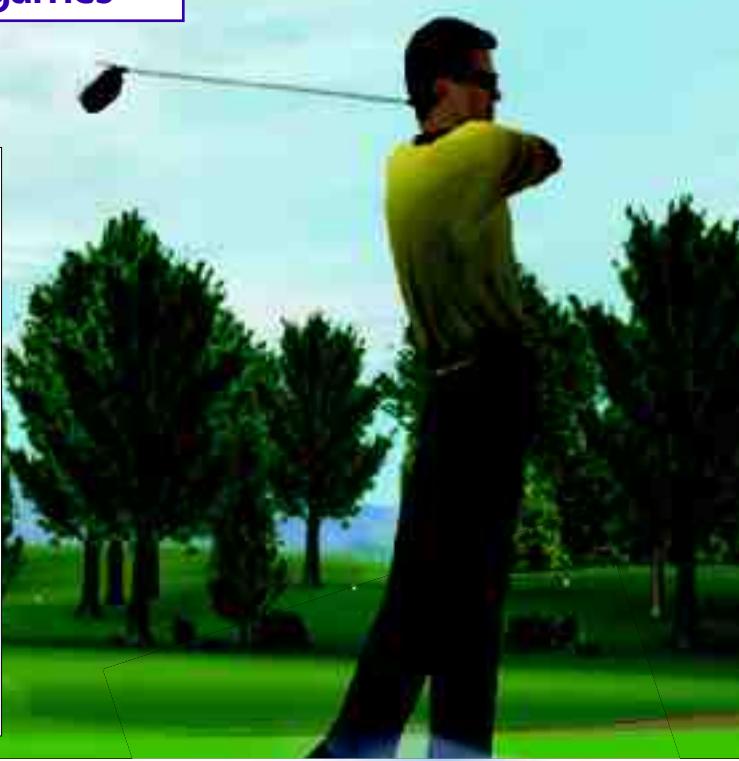
Net gaming Lan/Internet

Discuss www.pcformat.co.uk/mag/gene

47% **PCF says...** "A textbook case of how a game can be less than the sum of its parts."



Dave looks just like a pro. With a very small stick.



Swing across for the perfect drive, swing downward to vent your frustration.



The computer will do much of the aiming for you on the amateur levels.



Playing in the sand is all part of the game...

ACE OF CLUBS

Gametrak Real World Golf

Realistic motion captured golfing in your home? The least strenuous sport in the world just got less so

Price £40 Publisher In2Games Developer Aqua Pacific Web www.realworldgolf.com

Golf was once described as the best way to ruin a good walk, but what if you didn't have to walk? Yes, the future's here, golf in your very own home! But wait, surely that's the best way to ruin a well plastered wall? No! *Real World Golf* takes interactive gaming to new extremes, gets you off your sofa and has you swinging a novelty golf club at your monitor in minutes.

The hardest thing for golf games to do is to get their control method right. Most use button tapping or thumbstick twiddling to achieve their results. Though

BUY THIS IF YOU LIKE...

- >> **Golf**
Outside
- >> **Tiger Woods 2005**
EA
- >> **Links 2003**
Microsoft

effective given their limitations, it's just not very golf-like. *Real World Golf* tracks your body movements and maps them into the game. This means that your technique affects how well you can play, and also lets you add subtle touches like spin simply by altering your swing.

The direct motion tracking system works by tracking the cords attached to your wrists. It's all a bit restrictive and trifle silly, thanks to the console being tied to your feet, but all the game controls are accessed via simple hand movements and a foot switch.

SUPERMARIONATION

You don't have to be a golf pro as the amateur settings are very forgiving for the beginner and you'll be driving your ball down the fairway like a young Nick Faldo in no time. The tutorial and practice modes give you all the help you need to learn your own technique and how to improve. Once you can get the ball to do pretty much what you want then you can move on to single rounds or tournaments on the five golf courses.

The motion capture is surprisingly accurate and we firmly believe that a trip up to our local course would see us

reaping the rewards of a few hours practicing in this virtual *Real World*. Unfortunately there aren't that many courses to choose from in the game and the visuals can't compare with the likes of the *Tiger Woods* series. The biggest problem is that, like playing golf, it takes a lot of concentration to keep a consistent swing going for eighteen holes, let alone a whole tournament.

Despite the effectiveness of the tracking, it's difficult to see this package getting much use. It's clearly designed to be used in front of your telly, and that leaves it for those of us who have PCs in our lounge. That said, if you're like us, there's not enough room to swing a cat in the room your PC's in, let alone a plastic golf club.

Dave James

Party time

Swinging fun for all the family



As well as the normal golf modes there are 'party' modes that take place on the driving range and require you to do things like hit sections of huge dartboard or get the ball through hoops. It's not as simple as it looks, though, as judging distances can sometimes be difficult.

Needs 800MHz CPU, 128MB RAM, 32MB 3D card

Wants 1.2GHz CPU, 256MB RAM, 64MB 3D card

Net gaming None

Discuss pcformat.co.uk/mag/realgolf

76% **PCF says...** "Innovative and effective control method, but will it fit in your PC room?"

REAL-TIME WRONG 'UN

American Conquest

Divided Nation

Rewrite colonial history the fun-free way

Price £20 Publisher CDV Entertainment Web www.cdv.de

America is fairly keen on war. It fought the English over slavery and some odd concept called independence; then once we'd gone, its populace decided to fight each other. You know, for something to do.



Once the troops are deployed it's down to you to sort them out.

BUY THIS IF YOU LIKE...

- » American Conquest CDV
- » American Conquest: Fight Back CDV
- » North and South Infogrames



Upgrade units using these info screens.

OK, so maybe we don't know that much about American history or the Civil War, but luckily *American Conquest* is here to make sure we learn. It's all about the story behind the stars and stripes.

Before every battle in the 'campaign' and 'single mission' modes, you are treated to a short essay about the upcoming battle, who the main protagonists were and what actually happened. It is then up to you to recreate history or rewrite it, depending on your position.

YANKEE DOODLE

So, it's all historically accurate then? We expect so, but to be honest the vast scale of the battles stopped us paying too much attention to the specific tactics of our opposing generals. The biggest problem with the game is that when you start a battle you have to wait



You'll need artillery to take out buildings.

while all your troops arrive on the field in real time, and in most cases you're tasked with marshalling huge, unwieldy armies. Trying to keep track of what they're all doing and setting them up in the right places takes serious patience and concentration before battle even commences. You only have two view modes as well, either zoomed in close or very far away. When you're in tight you have little idea of what's going on, and viewing from a distance makes you feel disengaged from the action.

If you're interested in the American Civil War then you'll revel in building tents and whoop with delight as the strains of Dixieland fill your ears. If you're not, these tedious battles are not going to change your mind. **Dave James**

Needs 2GHz CPU, 256MB RAM, 128MB 3D card

Wants 3GHz CPU, 512MB RAM, 256MB 3D card

Net gaming Lan/Internet

43% **PCF says...** "Part game, part history lesson, and about as much fun as that sounds."

COMMUNIST TEDIUM

Hammer & Sickle

So, this is why the Russians lost the Cold War

Price £20 Publisher CDV Entertainment Web www.cdv.de

Maybe it's the accent, maybe it's the fur-lined hats, but the idea of becoming a Russian spy has always appealed. To add to the draw, *Hammer & Sickle* even looks and feels like a WW2 version of the classic RPG, *Fallout*. You have total freedom of movement, multiple endings and



Jail breaks are always messy affairs.

ON THE DVD

- » Playable demo
- » Screenshot gallery

BUY THIS IF YOU LIKE...

- » Fallout Interplay
- » UFO: Aftershock Ascaron
- » Commandos 3: Destination Berlin Eidos

continuous character development.

Outside of combat you explore the wilds of Germany in real time, and once a fight kicks off the game slips into turn-based mode. All sounds great, doesn't it?

TAKE THAT, CAPITALIST PIG

Unfortunately it doesn't work. The tutorial suggests a thoughtful, intelligent, plot-driven, game with lots of immersive elements. The instant you're dropped into your first mission, however, your original objective no longer applies and you just have to kill lots of Americans. From here on in you're pretty much on your own. Every now and then you'll stumble across a new person who either wants to talk about the war or shoots you. We're still not sure which we prefer. The level maps are horrific too. It takes someone with more imagination than sense to be able to ignore the stark edges of these tiny squares. The first few levels we could excuse for being small, but progressing onto later



"It's OK guys, I found out where the trigger was after all. Guys? Guys? Hello?"

missions you're still faced with the same piffling little grids.

Thanks to the lack of direction, you'll find yourself constantly reloading sections because you turn a corner and get shot, or your character's intelligence isn't high enough to charm the camp commandant. It is all very frustrating and not at all the game that it could be, or we wanted it to be. **Dave James**

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1.5GHz CPU, 512MB RAM, 128MB 3D card

Net gaming None

56% **PCF says...** "Tiny maps, no direction and very little fun. Apart from that, it's great."

KILLER APP

Agatha Christie And Then There Were None

Get 'em all in the drawing room and have it out

Price £20 Publisher The Adventure Company Web www.agathachristiegame.com

Agatha Christie is one of the foremost names in murder mystery writing, even though she died many, many years ago. Quite fitting then, that her name is attached to something like the point-and-click adventure game, a genre which itself



The mean older boys wont let you play, they just stand around acting suspicious.

ON THE DVD

>> Screenshot gallery
>> Playable demo

BUY THIS
IF YOU LIKE...

>> Journey to the Moon
The Adventure Company
>> Bone: Out of Boneville
Tecmo Games
>> Poirot
Suchet, not Ustinov

died a while back. Unfortunately, it won't be resurrected by this tedious effort.

You play a boatman taking a group of guests up to a spooky old mansion on the delightfully named Shipwreck Island, who then gets stuck there after his boat is scuttled. It turns out that the guests were lured there by the mysterious new owner, who has somehow found out that each of them is guilty of murder. This is the cue for the guests to start dropping like mayflies and for you to get some serious investigation done.

Obviously by 'serious investigation' we mean wandering around every room in the mansion that's not locked and picking up anything that's not nailed down. You spend most of the time walking through well-drawn backgrounds, hovering your cursor over every inch of the screen in the hope that it'll change and give you something to pick up or look at. The most frustrating aspect of

A boatman's lot is all keyhole spying and murder. Surprisingly little boating actually.

this is the main character's incessant art criticism. He has something to say about every darn picture in the place.

Observation is only one tool in the boatman/private detective's armoury; he can also talk to the guests. Basically this involves clicking on each character and asking them the same question that you asked everyone else and wading through pointless responses. Maybe this is like real detective work, but who cares? It's a game, it's meant to be fun, and it really isn't.

David James

Needs 733MHz CPU, 128MB RAM, 32MB 3D card

Wants 1.2GHz CPU, 256MB RAM, 64MB 3D card

Net gaming None

51 %

PCF says... "If boredom could kill, this game would be cold blooded murder."



Star Chamber

Price £30 Publisher Matrix Games Web www.starchamber.net

This online sci-fi card trader/turn-based strategy has you managing one of ten unique cultures as they explore the wilds of space and conquer disparate worlds. This is done by spreading your citizens and starships around and augmenting them with cards drawn from your own bought deck. The gameworld is daunting in its complexity, but the tutorial gives you an idea of how to proceed in the various multiplayer games and tournaments. There are

hundreds of cards that you can buy online, so it's constantly evolving. Can't trade these cards on the playground though...

Needs 1GHz CPU, 128MB RAM, 32MB 3D card

Wants 1.5GHz CPU, 256MB RAM, 64MB 3D card

Net gaming Up to four players, plus online tournaments

72 % PCF says... "One for the hardcore strategists only"

World Championship
Poker

Price £10 Publisher Global Software Publishing Web www.gsp.cc

Digital poker has become something of a phenomenon over the last couple of years, with every man and, according to a certain painting, his dog getting in on the adrenaline sport of the seriously lethargic. WCP is obviously desperate to create a different look from online tables and suffers as a result. You don't view the entire playing area, but have to watch as each of the cartoon AI flashes in front of you taking their sweet time making decisions. This is frustrating when you fold as there's no way to skip to the end of a hand.

Needs 450MHz CPU, 64MB RAM, 16MB 3D card

Wants 650MHz CPU, 128MB RAM, 32MB 3D card

Net gaming Lan/Internet

57 % PCF says... "Practice for free online and save yourself a tenner."



Motorama

Price £10 Publisher IPlayAllday Studio Web www.motoramagame.com

Back in the official Good Old Days of the Commodore 64 and Spectrum 128k you could pick up decent games for the paltry sum of £1.99, gems like the utterly brilliant Kickstart and Kickstart 2. Motorama is a modern remake, complete with 2D side-scrolling. You take jumps at speed, bounce onto tiny ledges supported in mid-air and, in a slight departure from the formula, collect giant gold medals. To all intents and purposes it's a platformer, but you're stuck on a dirtbike. The physics are decent, making it a challenge, but graphically it's decidedly unpleasant.

Needs 700MHz CPU, 64MB RAM, 4MB 3D card

Wants 1GHz CPU, 128MB RAM, 16MB 3D card

Net gaming High score battle

61 %

PCF says... "It may not be pretty, but it's entertaining enough."



Improvements extend as far as the interface, which is slicker than in previous versions.



Trade and industry are still vitally important.

SPACED-OUT MMO

Eve Online Red Moon Rising

Some resource gathering, and some pan-galactic dogfights with battleships the size of Holland

Price £10/month Publisher CCP Developer In-house Web www.eve-online.com

This is what's known in the trade as an acquired taste. The wilful complexity and sheer scale of Eve's massive space war is more than most people can stomach, but those who do fancy the feast will now discover far more on the menu than ever before.

Eve's been buffed noticeably, with new tutorials at the front end, and new ships for the players who have invested many months into their skills and their riches. The gigantic capitol ships are the most obvious addition to the game, but they're also the hardest to acquire: the skills necessary to fly the race-specific titans would take new players a year or more to learn.

SHINY SHIPS

Eve's vast scale means that people have to invest time, and Red Moon Rising has streamlined things that might otherwise take up our leisure hours. Thanks to the new science and industry panel, play is smoother, and Eve still caters for players who are as interested in economics as they are in guns.

Eve's manufacturing processes have been shaken up, with a reform of the factory system and a new factory mod

for the player-owned stations. This capitalist sheen serves to refine the many ways in which players can do business. The economics of an MMO have never been more complex, and never more interesting. Running virtual business is becoming steadily more accomplished, complete with researchers digging up new technologies in the laboratories of space.

But the real meat is in the new possibilities for combat. The new tiers of ships makes all the difference, with recon ships making ship-to-ship jamming

BUY THIS IF YOU LIKE...

- » Freelancer
- Microsoft
- » X3: Reunion
- Deep Silver
- » Universal Combat
- Dreamcatcher

easier, and the command ships threatening to enhance the abilities of entire fleets. Among the larger ships the carrier-class are most interesting, enabling players to launch swarms of AI-controlled drones, called fighters, to protect allied ships and attack enemies. The titans meanwhile are akin to flying space stations, and could change the method by which large-scale player-vs-player wars are fought.

What's exciting about Eve is the spectrum of possibilities that it offers. The game is entering a mature phase now, and it's easier than ever for players to own a role within a virtual universe of 70,000 players. Just don't let it pass you by; it's hard to say how long it's going to be this good. **Jim Rossignol**

The big ones

Look at the size of that thing...



Four flavours of Titan, one for each race, have now arrived in the Eve universe. These 20Km-long behemoths represent the new pinnacle of spacecrafts in Eve, and could provide the richest players with a lot of new and interesting ways to make each other explode.

Needs 1.2GHz CPU, 64MB 3D card, 256MB RAM

Wants 2.5GHz CPU, 128MB 3D card, 512MB RAM

Net gaming Online multiplayer

Discuss pcformat.co.uk/mag/evermr

88% **PCF says...** "Intimidating and complex, but it's the most rewarding MMO out there."

MATHS JOY

Carol Vorderman's Sudoku

Perfect for mathematics fanatics

Price £15 Publisher Xplosiv Web www.xplosiv.net

Sudoku was one of the crazes of last year, starting off in papers and then spawning books and quizzes. If you haven't yet been assimilated, don't worry; the disturbingly omnipresent Vorderman is here to explain all.

In a shameless bid to boost the sales of her Sudoku book, the

maths whiz has put her name, face and 30 minutes of screen time on this bandwagon-jumping title. As well as the Challenge Carol and classic modes, there is a Sudoku Solver that enables you to input any puzzle and get the answers. It's unlikely that people will want to spend ages at their PC playing with numbers, so you can print the puzzles and complete them with a common or garden pencil too.

Needs 500MHz CPU, 128MB RAM, 32MB 3D card

Wants 750MHz CPU, 256MB RAM, 64MB 3D card

Net gaming None

71 % **PCF says...** "Carol gives you all you need to become a master."



Carol provides hints if you get stuck.

PIXELATED PORN

Lula 3D

Not a realistic threat to the internet

Price £35 Publisher CDV Software Entertainment Web www.lula3d.com

The long awaited release of erotic adventure, Lula 3D, is here, and it's exactly what you might expect – a dull 3D graphic adventure, featuring breasts. And yes, we do mean graphic. Within minutes of stepping outside the Lula mansion you're confronted by an enthusiastic young couple seeking intimate carnal knowledge of each other in the summer house. Well, if you

insist on wandering around porn movie sets...

You play Lula, a purveyor of pornography in the leafy suburbs of LA. One day she discovers that three of her best friends have been kidnapped. Cue cringeworthy, unerotic adventuring. You're given various tedious tasks to undertake, like locating items or characters. Often the tasks are completely unnecessary; you have to look for the your car keys because a guy you've been talking to has forgotten they're in his pocket. Sigh.

Needs 1.5GHz CPU, 256MB RAM, 64MB 3D card

Wants 2GHz CPU, 512MB RAM, 128MB 3D card

Net gaming None

55 % **PCF says...** "Like watching blow-up sex toy theatre. Only less sexy."



An early Oscar favourite for this year?

Also out

By Dave James
GAMING ROUND-UP



Pageant's Field

Price £20 Publisher First Class Simulations Web www.firstclass-simulations.com

The original *Train Simulator* (PCF125, 78%) was incredibly popular and even now we're still getting expansion packs. Made by the same team as the London to Brighton add-on, this bestows over 30 miles of British countryside and four new locomotives. Strangely, it eschews realism by creating a fictional landscape to represent rural England. We thought the idea was to have recognisable areas, but what do we know?

Needs 1.2GHz CPU, 256MB RAM, 32MB 3D card

Wants 1.5GHz CPU, 512MB RAM, 64MB 3D card

Net gaming None

56 % **PCF says...** "A trifle pricey for a single, fictional scenario."



Babar and the Royal Coin Caper

Price £10 Publisher Mindscape Web www.mindscape.co.uk

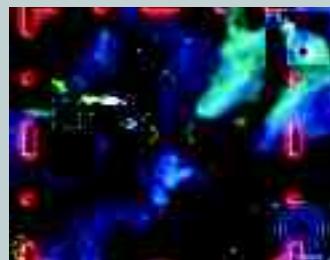
Would you trust an elephant to teach your children? Maybe if it was king of a section of French-speaking Africa you would. Babar's *Coin Caper* is aimed at pre-school and infant school kids and helps teach memory and logistical skills in nine challenges. Your children are open to explore the whole game from the beginning in two skill levels, with many variations on the core games.

Needs 500MHz CPU, 128MB RAM, 8MB 3D card

Wants 750MHz CPU, 256MB RAM, 16MB 3D card

Net gaming None

67 % **PCF says...** "Nicely animated elephant fun for the kids."



Acamar Rising

Price £10 Publisher Beteo Games Web www.beteogames.com

They're advertising this game as a 3D version of the classic *Asteroids*. Yes, there are similarities; for example you spend your time shooting asteroids in space. That's where it ends though, as all the fun parts of the vintage game are gone, replaced with tedium. The asteroids break up in one lump, so there's no chasing errant rocks bound for the space station you're protecting. Worse is the lack of momentum; let go of the controls and you'll stop dead.

Needs 1.4GHz CPU, 128MB RAM, 64MB 3D card

Wants 2.6GHz CPU, 256MB RAM, 128MB 3D card

Net gaming None

34 % **PCF says...** "Even if it was free we wouldn't bother."



Battle Castle

Price \$20 Publisher Rusty Axe Games Web www.rustyaxe.com

It's difficult to understand why some companies believe that people should pay good money for 'retro' games. You can head to a games store and pick up a copy of *Far Cry* for a tenner, but these guys think that because they're distributing straight to the consumer they can charge the same. *Battle Castle* isn't as bad as it looks; it's fairly challenging in a rapid button slamming way, but it's nothing we haven't seen on free Flash games available on the net.

Needs 500MHz CPU, 64MB RAM, DirectX 9

Wants 700MHz CPU, 128MB RAM, DirectX 9

Net gaming None

54 % **PCF says...** "Diverting in a mindless way, but overpriced."

Special Offer



Eat grav-gun, my evil foe. That'll be £3.50 please...

FRAG FOR CASH

Prizefight

Make money simply by playing your favourite games online!

Web www.prizefight.co.uk

Ever seen people like Johnathan 'Fatal1ty' Wendel strutting his stuff and thought "I want a piece of that pro-gaming action. Tell me PCFormat, what can I do?" Well fear not gentle reader, we're here to get you a slice of that delicious cash-pie.

BOUNTY HUNTER

Prizefight.co.uk is a place where you can win real money, simply by playing your favourite games. After signing up on the site, players are free to join any of the scheduled events for small entry fee (generally £1) and if they finish in the top three at the end of the match, they cash in on the £10 minimum pot plus all the entry fees. There are different events with different prize structures. First place takes 100% of the pot, for example, or the winning team share the pot equally, regardless of individual kills.

We've got together with Prizefight to give every reader £5 starting stake so you can enter the events straight away. Anything you earn after that is yours to spend or squander on entering more matches. We made money on our very first session on the site, and we'd wager that you're probably



loads better at Counter-Strike: Source than us.

Just visit www.prizefight.co.uk and register a user account. Use the special promotional code **FTPCF-PROMO-ZHFSY-SDSAF** when you sign up to get your PCFormat £5 starting credit, and get fragging. At the moment the system only supports Counter-Strike: Source and Half-Life 2 deathmatches, but there are plans to add many more first-person shooters and real-time strategy games later this year.

The truly great thing about Prizefight is way that all players are seeded after their first deathmatch (and their rankings are updated automatically for every match thereafter) so you'll never find yourself playing against people who are much better than you; this guarantees close matches that you'll have a good chance of winning – or losing of course. Happy hunting everybody!

Terms and conditions apply – check out www.prizefight.co.uk for further details.



Advertising Feature



These humble coloured blocks will take over your life, and you'll love it.

COIN-OP ACTION

RealArcade

Get access to over 300 of the most devilishly addictive games ever made

Web www.realarcade.com

RealArcade is a one-stop portal for a million gaming needs. Not only does the service grant you access to over 300 puzzle, arcade and action games, but you can also download some big-name titles (like *Driver* and *Spongebob Squarepants*) and use the RealArcade software as a portal to play all the games you already have installed on your PC. It's perfect if you want quick access to your own games collection, or a world of new games you haven't yet tried.

GAMES ON DEMAND

Once the portal is installed on your machine, you have full access to all the RealArcade titles through a well laid-out browser interface. On the coverdisc you'll also find some special game demos for you to try out, along with the RealArcade installer. *Ancient SuDoku*, *Chanz 2*, *Diner Dash*, *Gem Shop*, and *Zuma Deluxe* are all top examples of that breed of puzzler that sucks you in for 'just one more go', until you realise it's 4AM and you've spent all night fretting over the alignment of little coloured balls.

Our favourite game here is *Zuma Deluxe*, in which players control a frantic ball-flinging Aztec



frog must link up chains of coloured balls, and must work their way through a maze. If you don't link them all in time it's game over. You have to keep you mind on several strings at once, and the pace is pretty relentless.

All the games have one vital ingredient in common though: RealArcade specialises in that elusive 'pick-up-and-play' factor that is missing from many modern PC games. All the titles available here are instantly accessible, easy to get into and are great for just grabbing five minutes of fun.

RealArcade's raison d'être is to provide PC gamers with an alternative to the modern publishing model: tons of great, distracting little games at your fingertips for a fraction of the cost of mainstream releases. Purists will bemoan their patchy graphics and sound, but for a pure blast of arcade action, you can't go far wrong. We can't tell you how much smoother this issue of PCFormat would've gone if it weren't for the countless hours lost to the likes of *Zuma Deluxe*. It's horribly addictive, highly enjoyable stuff.



PCFormat

workshops

Get more from your PC today

OUR PROMISE

Every month we bring you the biggest and broadest selection of tutorials around



9.4GB of PC essentials...

Each month find all you need for the tutorials on the disc, plus extra PC apps and resources...

ON THE DISC

Please note that not all the programs mentioned in Workshops are on the CD edition of PCFormat. Check page 6 for more info.



THIS MONTH

» CODING REALbasic



Support for 3D in the BASIC language? Such things may sound like madness but, by Jove, it actually works! We'll show you how to create a 3D browser to view your pictures and photos in an exciting new way, teaching you some of the fundamentals of coding in BASIC at the same time.

» WEB Serif WebPlus



With WebPlus, Serif has brought desktop publishing sensibilities to web site design. No longer will your website be a botched mess of scattered links and excruciating background images. Follow our guide and you'll have a site for sore eyes in no time.

» XP Ashampoo PowerUp XP



Is your PC in need of a good tune-up? Streamline Windows to your exact needs with this program that allows all the fun of registry editing, without the primal fear of obliterating your OS installation entirely. Consider the number of minutes wasted waiting for Windows to do things you don't want it to. If time really is money, you can't afford to miss this one.

» GAMES Future Pinball



What with all the new-fangled arcade machines around these days, some forget that some of the most fun you can have for 50p is with a pinball machine. With our guide you'll even be able to spend that on penny sweets, as we teach you how to design and play the architect of many a misspent youth on your very own PC.

PLUS

114 » GRAPHICS

Xara XS is a powerful graphics program that specialises in vector images. If you want some smart-looking illustrations for your website or documents then look no further.

117 » GENERAL

Do you have photos that the world simply has to see? Then present them in

the proper manner: a Flash slideshow for your website. Using *TurboDemo Album*, no longer will your site patrons need to click through endless blurry thumbnails to get to the really incriminating stuff.

120 » CODING

Following on from last month's build-your-own-browser tutorial, this time we show you how to embed video by digging deeper into *BrowserBob's* functionality. If you've ever

wanted to share video from your mobile phone with the world, the web could be the perfect theatre for your directorial debut.

124 » LINUX

What use is a rock solid operating system if there's no software installed on it? We show you how to download user-friendly, freely available and easily installable software, such as *RealPlayer* and *Flash*, to your as-yet untouched Ubuntu Linux distribution.

Sam Rowlands has some essential advice for would-be programmers about coding in 3D

The term 3D often conjures up the thought of videogames or movies, but 3D rendering has myriad applications. In fact, many 2D games are now written using a 3D engine because this approach offers the programmer far more flexibility and speeds up the design process exponentially. Architecture, marketing, packaging, product design, house and (as we saw in last issue's **Real Landscaping Photo workshop**) garden design are all disciplines which have been greatly affected by the arrival in the mainstream of 3D packages.

A NEW DIMENSION

The key to creating a convincing 3D environment is its physics. When you first



start designing in 3D, you'll realise that the basics, such as gravity or wind, don't exist automatically, so objects stay where they are placed and

do nothing until told otherwise. Objects do not initially have clipping paths either, so they can pass freely through each other until you define their surfaces. Thankfully, **REALbasic** has an easy way to test if objects are overlapping.

Everything that is viewed in a rendered 3D space is done so from a viewpoint that you determine. Light also needs to be shone on any objects you design, and shadows need to be created. Animation is achieved by moving the objects or the viewpoint, while redrawing the 3D space rapidly makes it seem like the objects are moving smoothly.

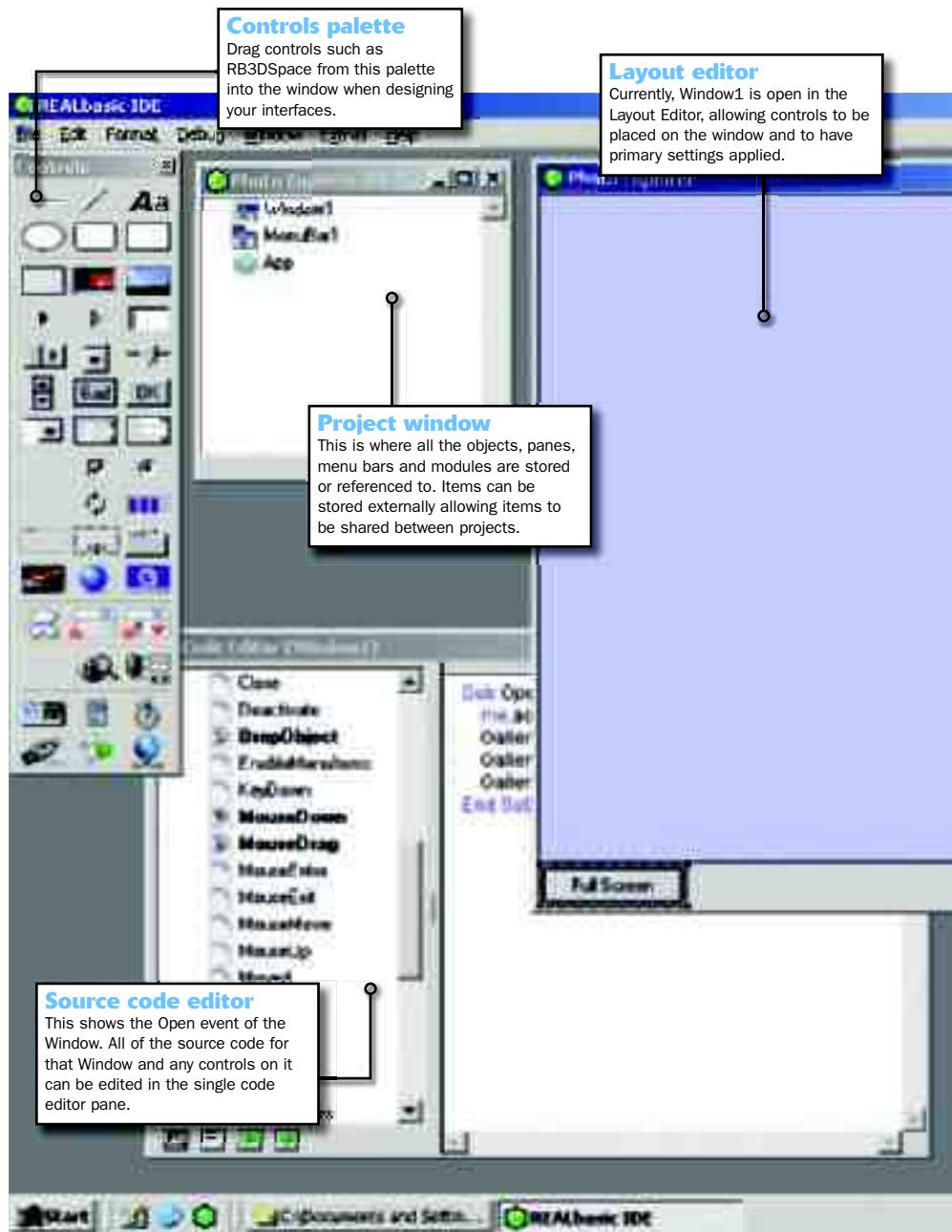
THE REAL DEAL

Once you've mastered the basics of 3D environment design and rendering,



though, all of the above will become second nature, and before long, you'll be producing high-quality 3D environments of your own.

Have your say forum.pcformat.co.uk



Make a 3D photo browser

part
12

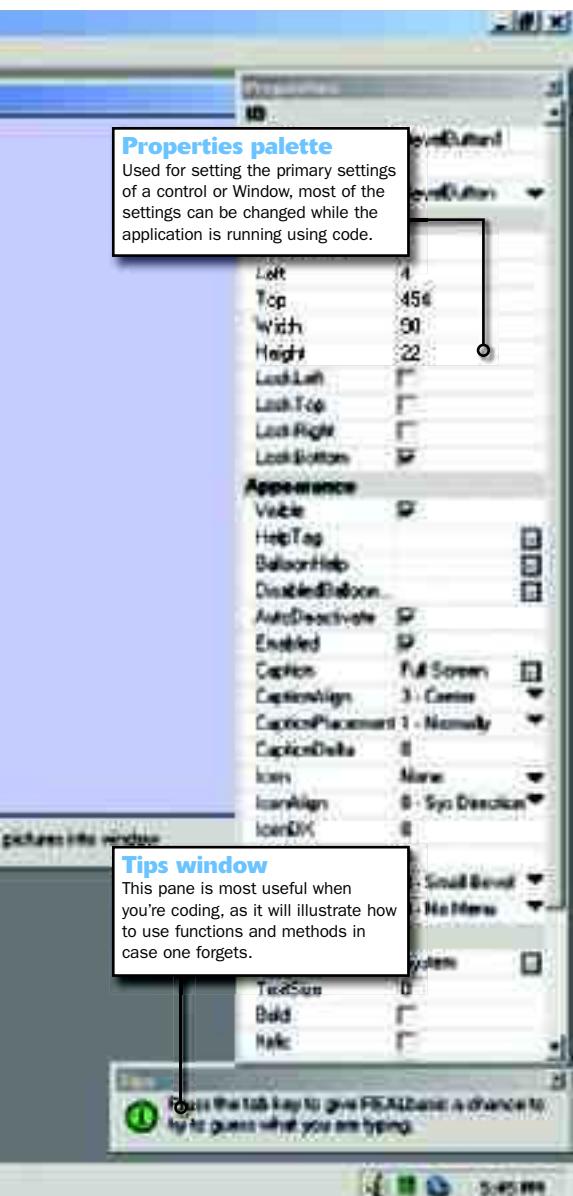
Sam Rowlands creates a compelling new way of looking at digital photos and images in 3D

Writing software apps or computer games is not very easy, but **REALbasic** and other Integrated Development Environment (IDE) applications, such as **Visual Basic**, aim to make it easier. **REALbasic** is the only tool in this genre that includes a 3D engine that works across

multiple platforms. This means that the application we're about to build in this tutorial will be able to run on Windows, Linux and OS X-based machines. The professional version of **REALbasic** is required to compile for other platforms, however. Most amateur coders tend to steer clear of 3D applications, because they're seen as

Let's get started...

Taking your first steps in *REALbasic*



"You can present your image collection in an entirely new and interesting way"

complicated, unforgiving and not a great deal of fun to use – but as you'll see over the next two pages, *REALbasic* is different.

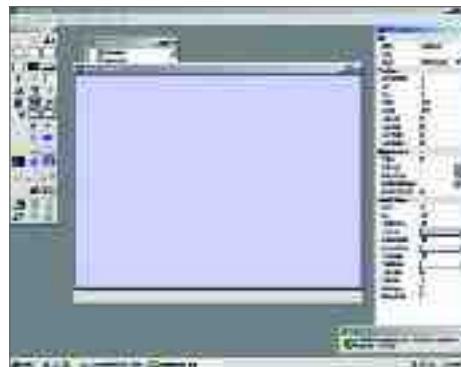
This tutorial will not only introduce the exciting aspects of programming 3D elements, but also illustrate some of the basic principles of object-orientated programming (variables or properties, classes, objects and methods), and will allow you to get to grips with *REALbasic*.

PHOTO FINISH

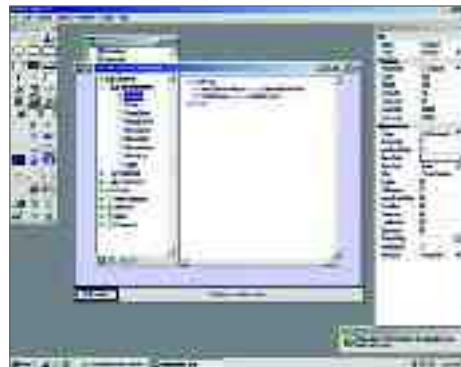
This tutorial contains all the instructions you'll need to create a new 3D image browser. All the code you'll need is also available on this month's



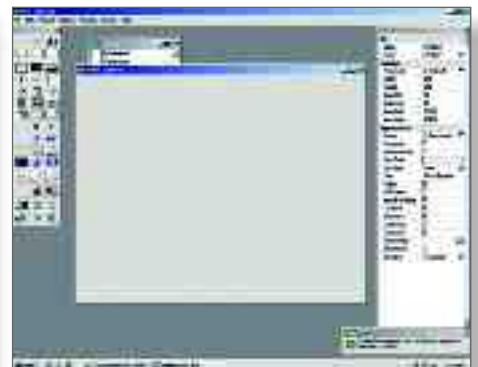
1 REALbasic needs the Quesa.dll installed to use 3D. Look in the **System** folder of the Windows XP, and you should be able to locate it. If quesa.dll is not in that folder, then it needs to be downloaded from www.realsoftware.com/download/windows



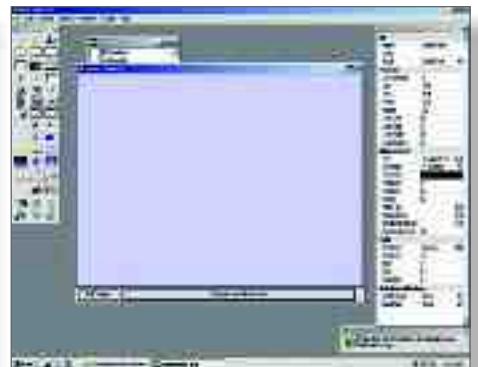
3 Drag the RB3DSpace into window1. Use the **Properties** to set the top and left to 0, width to 640 and height to 450. Change the name from RB3DSpace1 to Gallery3D. Set the Hither & Yon to 0 & 10, AmbientLight to 90, check 'FogVisible' and FogStart to 1.



5 Double-click the **Full Screen** button to bring up the **Code Editor** and display the Action Event of the BevelButton1 button (Full Screen is only the button's caption). Enter the source code from section five (which you'll find on this month's coverdisc) into the window.



2 Launch *REALbasic*. Double-click **Window1** in the Untitled window. Use the **Properties palette** (on the right-hand side) to set the width to **640** and the height to **480**. Change the Title to **Photo Explorer** and check **GrowIcon**, **LiveResize** and **ZoomIcon**, which are further down the palette.



4 Add a BevelButton to window1 and set Left=4, Top=454, Width=90. Add a StaticText (the icon of two letter 'Aa') and set the properties; left=106, top=454, width=514, Check LockLeft, LockRight and LockBottom, Text=Drag pictures into window, TextAlign=Center.



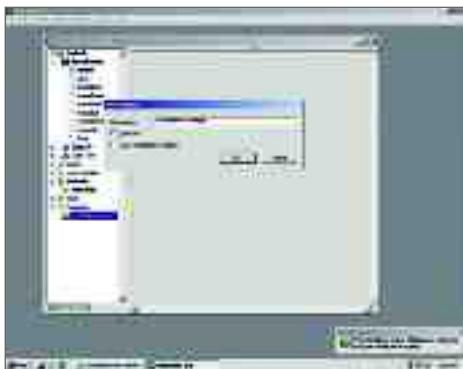
6 Select **New Method** from the **Edit** menu, enter **AddPhoto** into **Method Name**, then set **p** as picture into **Parameters**. The **Return Type** dialog should be empty and it doesn't matter what Access Scope is set to. Click **OK** and then enter the code from section six on the disc.

Turn the page for the rest of the tutorial...



...continued from last page

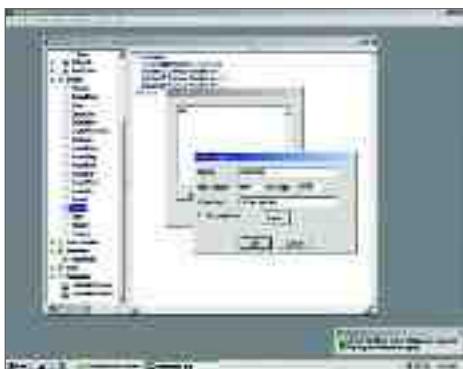
Add finishing touches to your 3D photo viewer



7 Two properties need to be added, **LastAddedY** and **LastAddedX**. Select **New Property** from the **Edit** menu. Next, you should enter **lastAddedY** as integer and then click on **OK**. Repeat the process, but this time enter **lastAddedX** as integer.



8 Window events are listed underneath the heading **Events** on the left-hand side. You will need to make sure that the square to the left of the **Events** header contains **-**, and if not, click on it. First add the code from section nine on the coverdisc to the **Open Event** of the Window.



9 Next, the image file type needs to be defined, and selecting **File Types...** from the **Edit** menu opens the **File Types** dialog. Click on the **Add...** button and enter the information as it is laid out in section 10 on the coverdisc, then close both dialogs by clicking **OK**.



10 Add the source code from section 11 into the **DropObject** event of the window. Then create a new method called **MoveCameraToPosition** with the parameter of **Position** as **Vector3D**. Then enter the code from section 12 into the window.



11 The properties from section 13 of the coverdisc need to be added to the window, and then the code from section 14 needs to be added into **MouseDown** event of **Window1**. Lastly the source code in section 16 needs to be added into the **MouseDrag** event of **Window1**.



12 And that's it – your first REALbasic project is finished. Save the project in the **File** menu, then run it and drag a selection of pictures into the window. Drag the photos around and then double click on one to zoom in, Click once to return to the view above.

ON THE DISC



REALbasic 2005

The definitive cross-platform development tool, with more features than you could possibly ever need. Once you've finished with our coverdisc version, you can register it at www.realsoftware.com/download/windows

RB3D Utility

An extremely useful application which can be used to convert .obj 3D files into a plethora of other formats. You'll need it to convert files into 3DMF format, so that they can be used in REALbasic. www.miensoftware.com/files/rb3dutility.zip

Blender 3D

A fully functional 3D modeller, and it's absolutely free! This open source application has been around for a while, and is still very popular with home coders. Find out why by giving our coverdisc version a try. Blender requires RB3D utility to convert files to work with REALbasic. www.blender.org/cms/Blender.31.0.html

Inno Setup

Required for distributing any software on Windows. Provides a Windows installer and uninstaller for compiled REALbasic applications. www.jrsoftware.org/isdl.php

"At last – no more clunky photo slideshows or grainy thumbnail galleries!"

■ coverdisc as part of the extended tutorial files. Once this little application's up and running, your days of flicking through endless thumbnails in search of the right image are over. Our application will use 3D space to present your prized image collection in an entirely exciting and fresh way.

In this tutorial, we've given you a grounding in relatively complex techniques, like creating a usable 3D space, organising images, and designing your program's interface, as well as some basic 3D programming tips. We will revisit and extend our new application in the next issue of **PCFormat**, in order to add some impressive extra features and refine what we've begun here, and by the time we've finished, you'll have an impressive 3D photo viewer, and the skills to code all kinds of applications for yourself in REALbasic. At last – you'll never have to suffer the ordeal of wading through clunky photo slideshows or grainy thumbnail galleries again! **PCF**



Upgrade

A new version of REALbasic is released every 90 days. This means that bugs are fixed quickly, and new features are added regularly. To upgrade REALbasic, visit realbasic.iworldstore.com/shop.lasso

Create a banner in Xara XS

Xara XS is an extremely powerful and versatile graphics tool that can bring professional graphics to even the most humble of sites. Rod Lawton demonstrates some of its tricks

We've got a web theme going this issue, with two excellent design tools on the disc. Xara XS is perfect for creating web graphics, not least because of its very good GIF export options (see our walkthrough). We're going to use it to create a banner for the website we're designing in our other web design application, *WebPlus* 7.

Xara XS combines both bitmap and vector graphics tools. You can use it as a vector drawing program, complete with preset shapes, bezier drawing tools, node editing and even transparency effects. But then it also has natural media tools and texture fills to help you produce photo-realistic images. You can combine these with photos, or simply use Xara XS as a quick and easy photo enhancer in its own right (the excellent online help explains how the photo editing tools work).

The advantage of using a drawing application for web graphics is that your images are scalable. You can export them as bitmaps at any size without quality loss. For example, you could create a logo for your site, then export it at a range of different pixel dimensions according to whether you wanted to use it as a banner, as a page flash or just a graphical bullet symbol.

If you like what you see in Xara XS (and there's a lot to like), as a registered user you qualify for a special Xara Xtreme upgrade price of just £37.30 – just click the Upgrade button on the Xara XS splash screen when it first starts.

Xara Xtreme brings you a host of extra options to give your graphics a professional edge (in some cases quite literally) including drop shadows, feathering, bevels, live effects and more. **PCF**

Bitmap image
You can use bitmap images and photos in your work – there's even a built-in photo editor.

Toolbar
When you click on any tool, the options bar across the top of the window displays all the relevant controls.

Vector object
Xara can work with both vector graphics and bitmaps, giving it immense flexibility.

Texture fills
You can create a whole range of realistic-looking natural textures simply by dragging them from the Fill Gallery on to any object.

Creating a web banner

It's easy to adapt the excellent clip-art images



1 First, we need to create a new, blank document (or accept the default document size when Xara starts up). We've chosen the landscape A4 format, though it's not too critical because our vector artwork can be scaled to any size that tickles our fancy.



2 Now we'll display the **Clipart Gallery** – there's a button for this on the main toolbar at the top. The clipart is arranged into folders, and you just double-click the folder to display the contents. (You can add your own files and folders to the gallery, too.)



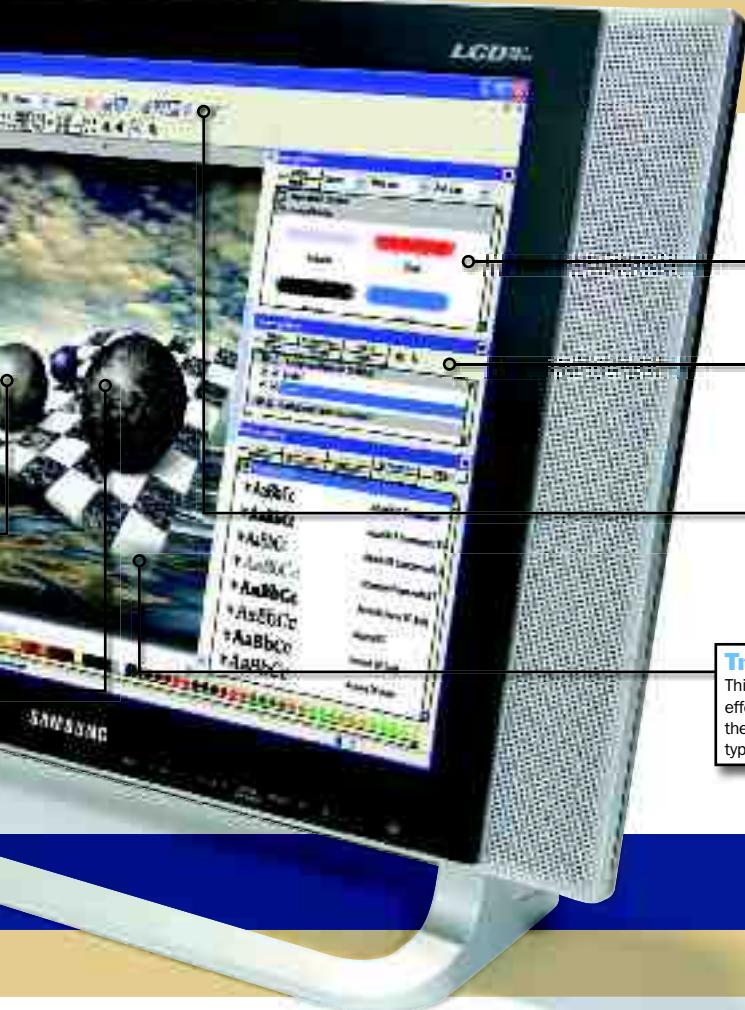
“Vector images are scalable – they can be sized both up and down”

6 Now we can click on the text tool. The options bar displays the text options, including font and size. You only need to get the size approximately right at this point, since it's easy to change later (there's also a fonts gallery for WYSIWYG font selection).

ON THE DISC

KEEN ON WEB DESIGN? FIND MORE WEB RELATED APPLICATIONS ON THE DISC





Natural media strokes

To apply a natural media stroke to a vector object, just drag it from the Line gallery.

Xara galleries

Xara's galleries can either be floated over the workspace or docked to the side of the screen.

Gallery buttons

Click these to display Xara's galleries (palettes, in other words).

Transparency effects

This sample illustration uses transparency effects. They're really easy to apply, using the Transparency tool and a set of gradient type and mix options.

ON THE DISC



Xara XS

An excellent, thoroughly modern drawing application which is also a taster for Xara Xtreme, surely one of the best-value drawing and illustration applications on the market right now.

www.xara.com

Serif WebPlus 7

Also on this month's disc is WebPlus 7, which brings DTP-style design to web page layout. Starting with one of the program's templates, you'll have a site ready to publish in no time.

www.serif.com

ArtRage

Xara XS has natural media brushstrokes, but if you want to get a feel for painting with 'real' media in a natural way on your computer, you have to try ArtRage.

www.ambientdesign.com

3D Canvas

If you want to extend your artwork into three dimensions, try 3D Canvas. It can also produce animations, which could be perfect for your web pages.

www.ambibilis.com



3 We've chosen this image of a vintage car from the **Example Xara X Drawings 2** folder. To add it to our document, we simply drag it across from the gallery. The item is then downloaded and inserted – a process that only takes a few moments to complete.

4 We've given ourselves more space to work in by closing the clipart gallery. The artwork consists of many different shapes, so to move them all as one, we've selected them all with **[Ctrl]+[A]** prior to dragging. Now we can delete the unwanted text item.

5 We want to add our own text to the image, but the first thing to do is make sure it's going on the topmost layer and thus won't be obscured by the other items. First, we display the **Layer Gallery**. Now we click on the top layer to select it as the one we wish to work on.



7 To resize text, simply click on it to select it and drag a corner handle. This is much quicker than trying to find exactly the right font size in points. We've added two more smaller text blocks with our fictitious company's address and phone number.

8 Now we're ready to export our banner by clicking **File→Export**. Because this is an illustration with a comparatively restricted palette, the GIF format is ideal. In the **Palette Options** tab, we can check the colours used in the GIF and that transparency's selected.

9 The **Bitmap Size** tab lets us choose the size at which the image is exported (700 pixels wide). Remember, this is a vector image, so it's perfectly scalable – both up as well as down. This applies less to bitmap images, or those containing bitmap fills, mind.

JPEG or GIF for your images?
Rod Lawton makes the choice...

There are two main graphics formats in use on web pages, and it's important to choose the right one if you want your graphics to look their best. Do you save your files as GIFs or JPEGs?

The GIF format is restricted to a palette of 256 different colours. This is a problem for photographic imagery, which requires thousands, if not millions of colours for accurate colour rendition and smooth tonal transitions. If you try converting a photo to a GIF, you'll soon spot the problem. The GIF file will attempt to approximate tones and colours outside its palette using dithering. This produces coarsely-speckled areas which are a dead giveaway for bad GIF conversions.

GIF FROM THE GODS

The GIF format has significant advantages for logos and illustrations, though. These often have a restricted colour palette that's actually smaller than the 256 colours available, so no dithering is required. What's more, GIFs support transparency; very useful for websites.

Unfortunately just about all graphics packages and image-editors will produce anti-aliased edges. Pixels are 'feathered' so that your image blends smoothly with its background. This produces coloured edges or fringes to GIFs with transparent backgrounds because the GIF format can only render a single, specific colour as transparent. The anti-aliased pixels around the object stay opaque.

One solution is to use a background colour the same as the web page's colour when designing your GIFs, though this isn't much help if you decide to change the page colour later on.



A photograph like this would be ruined by dithering if it was saved as a GIF.

Have your say forum.pcformat.co.uk

Build your own website



Assuming you've tried **Serif PagePlus**, you're going to find the **WebPlus** working environment comfortably familiar. The two programs work in much the same way, and the interface layout is identical. **WebPlus** documents are, in effect, mini websites. You can create as many pages within a document as you need. It's best to start with a **Web Wizard** though.

The biggest time-saver is the use of a **Master page** for items which you want to appear on each

page in the site. You can add not just graphics, but navigational links too. The **Web Wizard** sites have a link to each page on the site, and these are set up automatically. It's easy to add pages and set up the links yourself.

Our walkthrough will get you started with this excellent web design tool, it will also show you how to incorporate graphics designed elsewhere, including the web banner we created in **Xara** over on page 112. **PCF**

Adapting a template

Take the easy route to a well designed web page.



1 We're starting our site using one of **WebPlus's Web Wizards**. It doesn't matter too much which one, because we're more interested in the page/site structure, which is common to all of them. The wizard prompts you to fill in your personal/company info.



2 It uses this information to fill in details on the home page, including your name, address, phone number and email address. You can navigate between the six pages on the site (you can add more) using the page navigation buttons, bottom left.



6 We need to tighten up the layout, then, and to do this we're using **Layout Guides** (right-click on a blank area of the pasteboard to display a shortcut menu with this option). We've set up a grid of 20 rows and columns to help us align items exactly.

Upgrade
Serif has kindly offered PCF readers £20 off WebPlus 9, making it only £40. If you fancy a tabbed interface, HTML importing and more, ring the number below, quoting the reference R0/PCF/WP7/0106 before 25th February.
0800 376 7070

Adding hyperlinks

Linking your site's pages, and connecting to the outside world



1 If you select the text of one of the existing hyperlinks on the

Master page, then choose the **Insert→Hyperlink** command, you'll see how it works. The text is already linked to one of the other pages in the site – you can choose which one from a list.



2 You can add hyperlinks to objects too. We've switched to the sixth

Related Sites page, with the aim of adding links to the 'sphere' graphics. You can only link objects which aren't grouped, so we need the **Arrange→Ungroup Objects** command.



3 Now we can select any graphic and use the **Insert→Hyperlink**

command. Instead of picking a page from the list, we simply type the URL into the text field. Usefully, *WebPlus* remembers addresses you've typed before, which can save you time.

ON THE DISC



Serif WebPlus 7

WebPlus 7 is a supremely easy introduction to website design. It provides you with simple, easy to understand DTP-style tools and takes care of all the coding and formatting invisibly in the background.

www.serif.com

Firefox

Once you've tried Firefox, there's a good chance you'll never go back to *Internet Explorer*. The tabbed pages are arguably the most useful feature.

www.firefox.com

Ad-Aware SE Personal Edition

Spyware is a huge menace for anyone who downloads applications via the Internet. *Ad-Aware Personal Edition* is free, and you should run scans regularly.

www.lavasoft.com



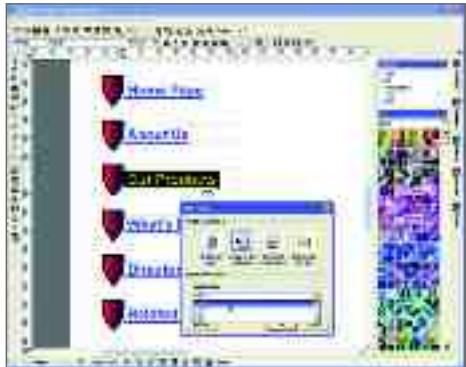
3 Many of the site design elements appear on each page. That's because they're on the master page. You need to switch to this (**View→Go to Master Page**) to customise what global features your site will have – here, we've deleted the background image.



4 And now we've changed the colour scheme to one which uses a white page background. We've imported the banner we created in Xara (use the **Import Picture** button) and set its size to the original's pixel dimensions using the **ChangeBar**.



5 At the moment, our new banner is sitting on top of the links, but we can move it to the back (**Arrange→Send to Back**) to bring them to the front again. Without the original background image, though, these links are now floating around aimlessly.



7 We also want a new graphic for the links, and one of *WebPlus*'s **QuickShapes** (the 'Badge' shape) is ideal. We've applied a gradient by dragging one on to the shape from the **Attributes** panel. We can now make five copies, one for each page link.



8 The grid helps considerably when positioning the graphics and the text links. Precise and regular alignment is one of the secrets of professional-looking design. Once you've finished, if you don't want the grid to be visible any more, choose **View→Guide Lines**.



9 You might want to leave them switched on, though. Even though we've now finished editing the Master page, the Guide Lines will help us line up the content properly on the pages themselves. Here, for example, we've enlarged and repositioned the main intro text.

Make a slideshow

Brian Edwards wheels out the family snaps with *TurboDemo Album*

Have you been to a website recently that's had lots of images, but hasn't made you click laboriously through pages of thumbnails? Chances are that the website in question has shown you the images as a Flash movie slideshow. Neat, isn't it? With the program *TurboDemo Album* such things are possible on your website too. In this tutorial we'll show you how to turn your photos into a presentation that can be launched from your homepage. The full program (version 1.9) is on the disc, but first off you'll need to visit www.turbodemo.com/eng/registration.htm to get the relevant activation code to run the software. Once this is done you can crack on.

We are assuming that people viewing your slideshow will know their context (holiday snaps, family parties, that kind of thing). *TurboDemo Album* also has built in on screen tagging and text linking, alongside voiceover and soundtrack recording, meaning the presentations can be educational and instructive if required too. **PCF**

Upgrade
From the makers of TurboDemo Album
on the disc is a trial version of
TurboDemo which can create tutorials
and demonstrations in web-friendly
GIF and flash movie form.
www.turbodemo.com/eng/index.htm

ON THE DISC

TurboDemo Album
Allows you to create, as we have done, slideshows of pictures for online presentation, or stand alone interactive presentations. www.turbodemo.com/eng/index.htm

JPEGCompress
Easily change the file size of your JPEG images. For quick changes there are multiple batch options. All with instant previews. www.dreamscapesoftware.com/products/jpegcompress/

VisiPics
Handy piece of software for deleting your duplicate images. It uses four different comparison filters as well as comparing filenames. foxe.griffox.info/visipics/

Avast Home Edition
Fabulous and completely free virus detection software which, unlike many commercial software solutions, runs without needlessly clogging up your machine. www.avast.com



1 To get going you'll need to register the program online at the address given to the left. Once registered, the program will open with the two options to start. The **Create Software Demo** option creates interactive presentations. However, what we want is an online slideshow for your pictures, so select **Create New Album**.



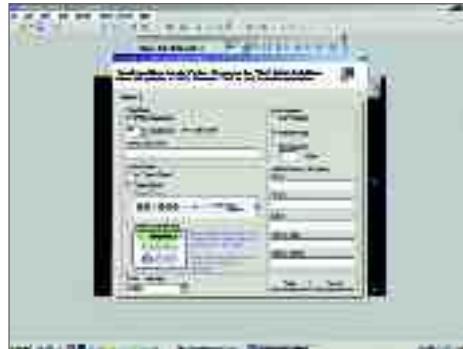
2 The program will open an Explorer-style window, from which you can select the images you're going to use in your slideshow. Also here you can change the sizes of the images when they are displayed, their orientation and also whether or not the images are centred or stretched to fit.



3 TurboDemo Album has a built in sound recorder, so if you have a microphone you can make a commentary on your images or import music. If you add audio the file size of the slideshow will be much larger. Online it's probably best to leave it silent. Click on the **Audio** icon on the slide thumbnail to open the options.



4 Press **[F3]** which brings up a single-frame preview of the slideshow. On this preview, set the time you would like each slide to be on screen. Also you can add additional elements to each of the slides, such as captions or hilarious speech bubbles popping out of your friends' mouths. Not to stitch them up or anything. Oh no.



5 From the **File** menu, select **Generate a Flash Animation**. Name the file, then you'll be taken to the options window. In the options change the JPG compression settings for the image and decide whether you would like the slideshow controls on display. When asked whether you want to see the slideshow in the browser, click **Yes**.



6 The program generates, and then reminds you of, the files you need to upload to your webspace. It also very helpfully gives you the exact HTML and javascript code you need to add to the webpage from which you want to launch your slideshow. Once uploaded it's as simple as clicking on a button to see the final product. Easy.

Mike Channell looks at ways to gain features in Windows, without giving up control

Much as I'm glad of the increased security that Service Pack 2 provides, a lot of the features it introduced were aimed at a less experienced user than myself, and while I am happy for the majority to be protected in their ignorance, for those who wish to open a downloaded file the first time they double-click it, it can all become a bit of a chore.

CONTROL FREAK

Products like PowerUp XP are a step in the right direction for those who feel that security measures should come with settings so that they suit every user. So why aren't all of these options available in Windows by default? Is the thinking that eventually you just get used to these extra little steps, the extra warnings that pop up, and that ultimately you'll have a safer system because of it?

We are on the brink of a very exciting new version of Windows, which will hopefully be extremely secure and accessible. But I personally hope that, if intrusions into the desktop experience are the default, then at the very least it won't take hours sifting through the registry to switch them off.

Accommodating new users is all well and good, as long as experienced PC owners don't get ignored. In the meantime, tweaking tools certainly bring people like me closer to their ideal working environment.



Whatever your opinion, Microsoft's Security Center can't be turned off.

Have your say forum.pcformat.co.uk

Power tweaks for your PC

Much as we all love Windows, there are always niggling aspects that wind us up about our favourite OS and its user interface. For some of us it's the fact that you can't simply open a folder in a new window without clicking through the tree again, for others it is simply the number of columns in the [Alt] + [Tab] menu that gets their goat. Whatever it is that particularly irks you, you can probably tweak or fix it in Ashampoo's excellent PowerUp XP program, a full version of which is available on our discs this month. To get your free key, simply install the program and go to the **Internet** menu. Towards the bottom you will see options to register the application. Follow the simple process and the Ashampoo will send you an unlock code.

A This is the main pane where you perform the majority of your tweaking. Here the various options on offer appear as check boxes or options for entry. Double clicking on an item (either the box or the item text) will activate or deactivate the option. Items that already have data associated with them will display their value alongside in red text, allowing you to quickly see the status of your system. One thing to bear in mind is that, if at some point you uninstall the program, as the changes are applied to Windows, the tweaks will

not automatically reset themselves. It is best, therefore, to save a profile before starting so that your system may be easily reverted to stock settings at a later date.

B This sidebar contains the main areas of Windows that you will be tweaking. The **Windows** section mainly contains small changes to the UI and changes that would otherwise be difficult to implement without some serious digging through Windows' often labyrinthine menus and control panels. **Drives and Files** gives you a quick overview of your various drives and allows you to alter settings pertaining to file systems and autorun functions. **Boot Options** contains functions that run when Windows starts up, allowing you to automatically perform optimisations every time you boot your PC. Security allows you to hide standard Windows options should you wish to restrict access to more sensitive areas of the OS. Finally, **Network & Internet** allows some optimisations and tweaks to improve both your network performance and online experience.

C These tabs divide up the sections into more manageable chunks. At first glance the sheer amount of tweaks can be somewhat overwhelming at first, but the system of tabs is intuitive and allows

Customise your OS

The mighty Windows interface, bent to your will



1 First up, you're presented with a window that allows you to tweak features that are either buried behind control panels or tucked away in the registry. The program is divided up into sections and tabs to make managing and altering XP's functionality easy.



2 Right-clicking on any of the functions brings up a menu with an option called Function Help, which you should refer to periodically. While it's difficult to destroy your Windows installation with PowerUp XP, knowing what you are effect your OS changes will have is recommended.

for some of the sections to contain sliders and other graphical interfaces. There's also a grey bar in this area which, in its default position, will show which section you are modifying – in this case system settings – and, within that, the **Boot Options** section. It will also inform you when a new setting has been applied to your copy of Windows. The small icon to the right allows you to change the interface of *PowerUp XP* slightly to create a more traditional 'directory tree' layout.

D The all-important **Restore** button takes you to a screen where you may rescue your PC if things start to go awry.

Before you start using the program go to **File**→**Create Profile File** and name it something along the lines of 'backup' or 'original'. If you are experimenting with features and end up confused, simply hit this **Restore** button, click on **Select Profile** and choose your saved original configuration. All that is left is to hit **Restore** at the bottom and a ream of information should appear in the pane, letting you know that your PC has been returned to a state of normality.

F Don't miss the **Other** button at the bottom of the sidebar. This unassuming key actually controls a lot of very useful features, and can alter the look of your Windows environment in a few clicks. For example, it allows you to customise icons for everything from standard folders and executables to what the symbol for a shortcut is. If you've ever been disturbed by the symbol that appears to grope the **Shared Documents** folder, now is your chance to change it. You can even change the icons that appear on your Start menu should you wish to. The **Other** sidebar also contains some tweaks designed especially for common Microsoft Office applications such as Word and Excel.



E While the **File** menu isn't usually the most noteworthy of areas in the majority of applications, this is, in fact, where *PowerUp XP* hides one of its most potent features. This is almost a meta-tweak; allowing you to change the program that is making the changes. The **Function Editor** allows you to configure all those registry changes so that you can toggle them within *PowerUp XP* rather than having to muck about with *regedit* every time you want to make a modification to values, and so on. Searching the internet you can find thousands of obscure registry changes that could be plugged into *PowerUp XP*.

ON THE DISC

Ashampoo PowerUp XP

Modify Windows with a variety of tweaks and hacks to optimise and improve your operating system and the apps that run within it, all without getting your hands too dirty.

www.ashampoo.com

Adobe Reader

The near-essential piece of software for reading PDF files is still as reliable as ever. If you haven't got this installed already, welcome to *PCFormat*, make yourself comfortable.

www.adobe.com

OpenOffice.org 2.0

If Microsoft Office's unwieldy front end has irritated you for the last time, your first faltering step away from the big M should be in the general direction of *OpenOffice*. Lots of goodness, none of the cost.

www.openoffice.org

Desktop Sidebar

Can't wait for Windows Vista? Get a snazzy sidebar that will show RSS feeds, clocks, calendars, messenger lists or whatever else floats your desktop-related boat. An excellent tweak in itself.

desktopsidebar.com



3 Let's test some functions. On the **Windows**→**General** tab you should see **Right-click option to open folder in new window**. You'll see the effects of this when the box is checked. Click the box and **New setting saved correctly...** should appear in the bar above the tabs.



4 If you right-click a folder in Explorer, you'll see a new option on the menu. This will allow you to search through your folders without either having a mess of windows across your desktop or needing to go through My Computer every time you need two windows open at once.



5 If you are feeling ambitious, and have some registry tweaks of your own that you would like as options in *PowerUp XP*, go to **File**→**Function Editor** and click the **Add** button. If you unsure of how the registry works, be careful. If you fancy dabbling, back up the registry first.

Make a movie player

Brian Edwards adds a film to his site with *BrowserBob*

Last issue we showed you how you could create a unique web browser, using *BrowserBob*, that would launch when surfers visited your website. They would then be able to browse your website in its own unique skin, and if they so desired, carry on using it to surf the rest of the internet.

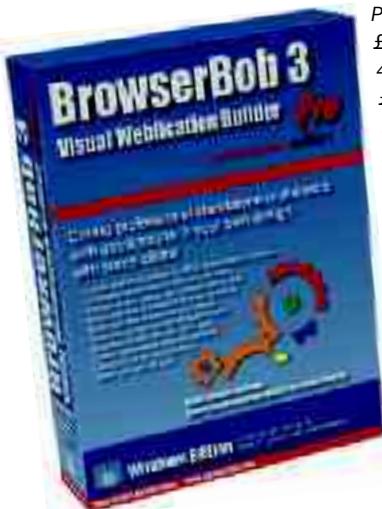
GET REAL

This issue we're going to try something a little different with *BrowserBob*, and use it to create a web browser that will launch a specially embedded *RealPlayer* welcome video when people visit your site. The basic process is very similar to the browser we created last issue, so you might find it helpful to have last issue to hand. *BrowserBob* is a useful tool and these are only some of its capabilities.

Visit www.browserbob.com to register for a key to unlock the software permanently. The firm behind *BrowserBob* is offering *PCFormat* readers greatly reduced upgrades to *BrowserBob* 4

Professional for £168, *BrowserBob* 4 Developer for £89, or *BrowserBob* 4 Basic for £24. [PCFormat](#)

Add a personal touch to web browsing with our step-by-step workshop.



ON THE DISC

BrowserBob

Let you create a huge range of applications. The site has extensive support, including scripting and contains downloadable finished examples of websites. www.browserbob.com

AVS Video Converter

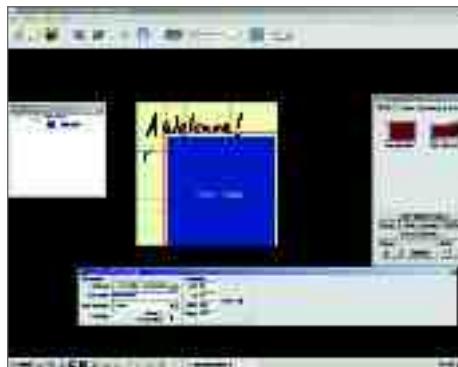
We converted the video from our mobile phone to the .rm format with this application. The trial version has a watermark. www.avsmmedia.com/videoconverter/index.aspx

Opera

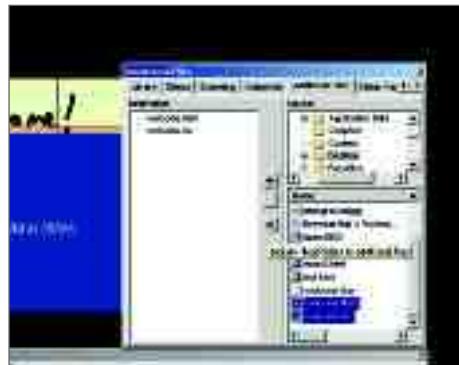
Another free web browser, *Opera* features extensive customisation abilities. It's also the first browser to include built-in voice activation. www.opera.com

Free Download Manager

Resume broken downloads with ease with this program. It also splits files into sections and downloads them simultaneously for increased speed. www.freedownloadmanager.org



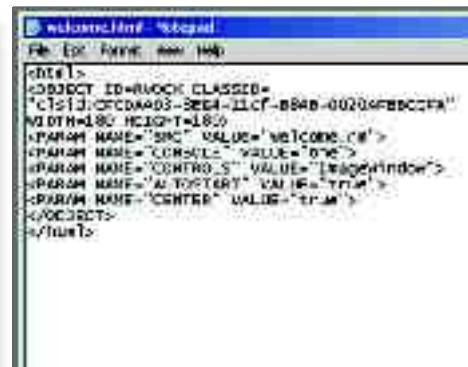
1 Start by changing the background that will be behind the video to your own custom design. We're using an image we created in a graphics program to look like a sheet of notepaper. Next, resize the **Main Web** window, which is where the video will be displayed. To make the video display work, we now need to add code.



2 Using the **Additional Files** tab in the **Library** window, add the source video file and the HTML file that will launch the video. This associates the app you are about to create with the video and the HTML launch page you have just created with the code in the previous step. Upload these files with your application when you finish.



3 As we shot the short video on a mobile phone, the player needn't be too high-end. We are just adding a **Close** button, but in much the same way we did last issue, you can mess around with resizing and other buttons. Assuming you are proficient in Javascript, *BrowserBob* also has room to add specific video control functions.



4 To display our video, which we've called **welcome.rm**, we need to create an HTML page to embed it into. This is a simple process, as all the page needs to include is the code contained in the screenshot above. Once this is typed in, you can move on to the next step: adding the video's source file.



5 To make sure that the video will launch within your application whenever someone visits your site, you need to set the HTML file as the Start Page. As you have already added this file to the **Additional Files** tab, it is easy to select the file as the **Start Page** from the **Properties** bar of the main **Web** window.



6 Click **Build** and select **SquidPlayer** so that you can launch the app from your site. Add the same code to your site's first page as last issue. Upload your revised first page, with the **SquidPlayer** included and your BX3 application to your webspace. Bingo, a unique display for a welcome video.

Virtual pinball machine

Liam Kavanagh shows you how to create an entirely personalised version of one of the original "just one more go" machines, using the simple yet flexible *Future Pinball*...

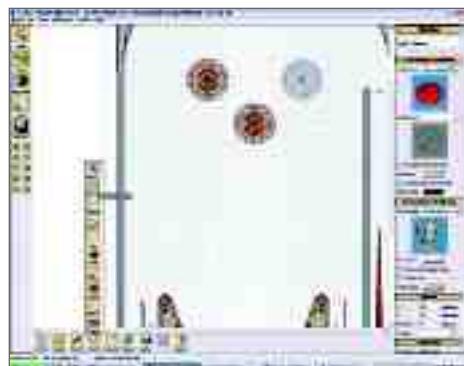
Getting killed while playing *Half-Life* may be annoying, but nothing quite captures the joint feeling of helplessness and frustration as watching a pinball drop between your flippers and disappear into the hole at the bottom of the table. Lots of people have fond memories of playing pinball, whether it was the real one you found in the arcade at Great Yarmouth when your parents dragged you there for a family holiday, or the virtual tables from those Amiga classics – *Pinball Dreams* and *Fantasies*. But what if you want to play them now? You could have a go with emulation and your totally legal copies of the original games, or maybe endure another rainy summer holiday with your dad and aunt arguing over the rules of *Canasta*. Or, alternatively, give *Future Pinball* a try.

Conveniently located on our coverdisc, *Future Pinball* is an extremely thorough package for both creating virtual versions of your favourite tables and inventing your own. It's roughly split into two sections, and our two part tutorial will cover both separately. This month we're going to tackle the actual nuts and bolts of making your table – putting down the bumpers, lights, targets and so on. *Future Pinball* has an enormous number of features, so we will barely scratch the surface in this tutorial. If you want to know what else you can do, browse through the manual (accessed through the help menu), have a look at the included "sci-fi classic" table, and drop by the official forums at www.futurepinball.com/forum. **PCF**

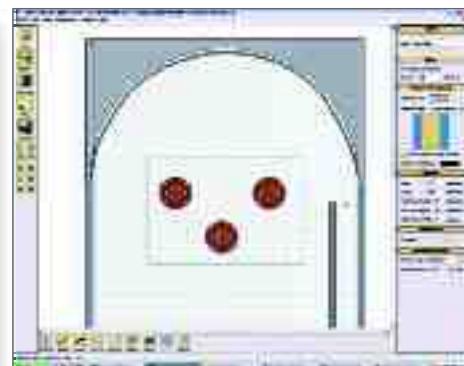
"Nothing quite creates the frustration of your pinball disappearing"

Building your table

Get started on creating your first pinball masterpiece



1 Upon starting a new table, you'll be presented with a launcher, two bumpers and a flipper. It's playable, but hardly fun. Let's start by adding that most classic of pinball features – the bumper. Select **Control→Bumper** from the bottom menu and place three near the top.



2 Multiple objects can be selected in the same way as icons in Windows. Draw a box around all three bumpers and then select **Bumper1** under **Sound Effects** in the **Properties** window to add some required noise. You can also change the models and textures if you desire.

Pinball controls

The keys for playing your creation

F5	Play table
5	Insert coin
1	Start game
Enter	Pull Plunger
Shift	Flippers
Z	Nudge Left
/	Nudge Right
Space	Nudge Forward
A	Special 1
'	Special 2
TAB	View Scoreboard



6 Let's try a row of targets now, to give something for our players to aim for. Select **Targets→Drop** and put them on the left hand side of the table. Change the **Bank Count** to 3. Put a wall behind them, so that they have something to bounce off when they are hit.

He scores

Select **Translite** to look at and alter your table's translate (the bit at the end with the score on).

Layer cake

Your table is built up of elements placed into layers. Use these numbers to move between them.

Bits 'n' bobs

Clicking on the buttons at the bottom will bring up a list of objects that you can add to your table.

Writing duties

Clicking the script icon will open up the table's Visual Basic code, for you to change how your table responds in different situations.



ON THE DISC

Future Pinball

The software used to create your own pinball tables. It is well supported and regularly updated, so also check the website for the very latest version.

www.futurepinball.com

The GIMP

You'll need images for your pinball table, otherwise it'll look pretty dull. This full features (but free) graphics program should be all you need.

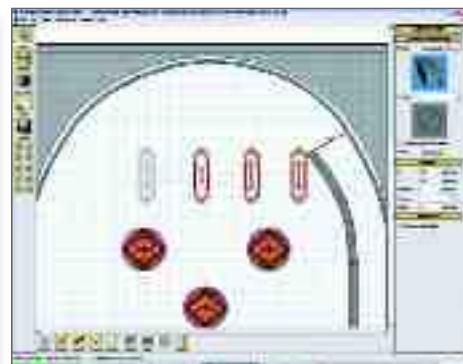
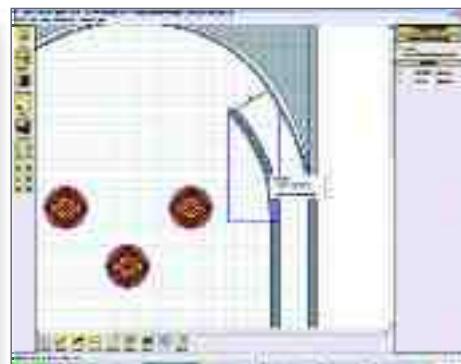
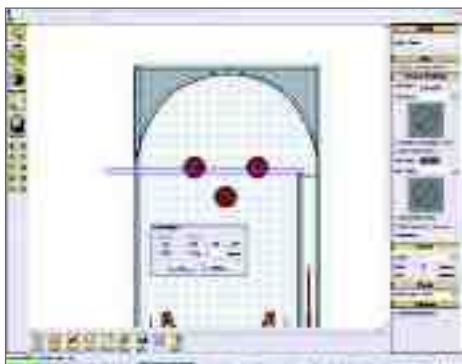
www.gimp.org



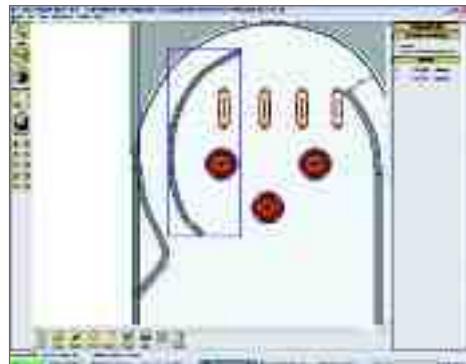
Show us your balls!

Now you've seen the basics, we want you to come up with a Future Publishing Future Pinball Table. Let your imagination run wild, send it to pcfmail@futurenet.co.uk and the best will go on next month's coverdisc.

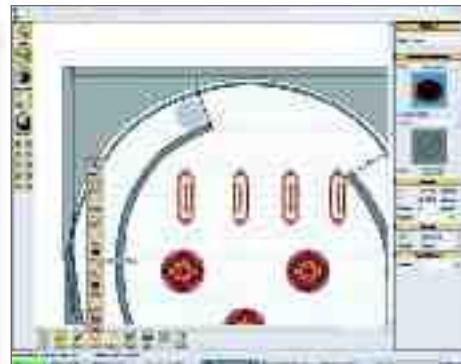
NEXT MONTH
PLAYING WITH SCRIPTING
WE SHOW YOU HOW TO SET UP A ROW OF TARGETS TO ACT AS A BONUS MULTIPLIER. WIZARD!



3 Click on the left hand side wall of the launcher and select **Copy**. Paste a new copy, rotate it 90 degrees and then put it at the top of the existing wall. We want to create a path for the ball to follow to prevent it from getting stuck at the top of the launcher.



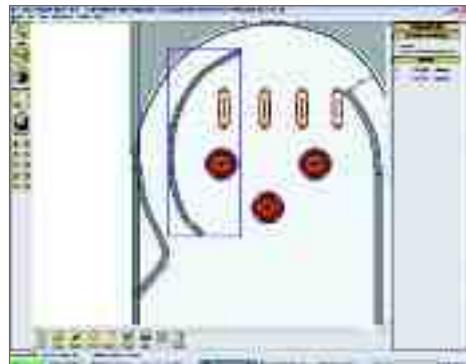
4 Shapes can be modified like vectors. Right click on the right-hand edge of the new wall and select **Insert new Shapepoint**. Click on the hardpoints and change the shape of the wall to that seen above. Don't forget to drag the one-way gate to the new launcher end.



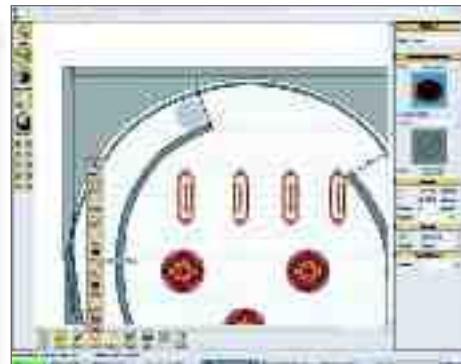
5 Select **Guide→Lane** and put down four lane guides above the bumpers. Be sure to leave space between them for the ball (hold **[Ctrl]** so see how big a pinball is). Place triggers between them by copying the ones at the bottom.



7 Every pinball table needs a jackpot chute for the really big points. By altering the wall you've just placed and creating a new one you should be able to create a path for the ball to follow. Make sure **Smooth** is selected and the path is wide enough for the ball.



8 Add a kicker to the top of the tube with **Control→Kicker**, and don't forget to put a wall behind it. Voila, you've now got a super amazing high score target to aim at. Except that it doesn't do anything. For that, you'll need to get your hands dirty with the scripting.



9 Future Pinball uses Visual Basic for writing code. Next month we'll talk you through setting up code for your row of targets but in the meantime take a look at the basic template. It's heavily annotated to help you figure out which piece of scripting does what.

Installing Ubuntu

Graham Morrison adds software to his newly installed distro

part
12



Last month, we covered getting Ubuntu Linux onto your computer. Hopefully you've been able to spend some time getting to know this wonderful Linux distribution. If you've done much internet surfing or file browsing with your new system, then you may have noticed that there are some serious omissions in Ubuntu's bundled software. Essential functionality like *Flash*, *Java*, *RealPlayer*, *Acrobat Reader* and even MP3 playback aren't included. This is because these applications aren't freely distributable in the same way as open source software, such as Ubuntu. To keep things as simple and as easily distributable as possible, they're not included on the install disc.

DOWN MARKET

This month concludes our two-part look at Ubuntu, and we'll use it to install some of the more important software that's missing. This will leave you with everything you need to enjoy Ubuntu, as well as a good idea of how to download and install the latest Linux applications. One of the best things about Linux is that there's a constant supply of downloadable software, and once you've learned how easy it is to install, there's no turning back! **PCF**

ON THE DISC

GCFilms

This app is to movies what *F-Spot* or *iPhoto* are to photographs. It manages your personal collection, and including online reviews and a wealth of film statistics. home.gna.org/gcfilms/

AbiWord

This was one of the very first Linux word processors to focus on compatibility with Microsoft Word, and it's still a main contender. www.abisource.com

Thunderbird

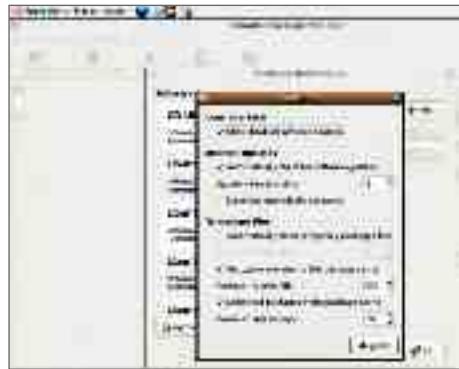
It's the cross-platform nature of the *Thunderbird* that makes it powerful. You can use it in Linux, OS X and Windows. www.mozilla.com/thunderbird/

GAIM

This is by far the best *MSN* Messenger client application currently available for Gnome, supporting file transfer and even the cool 'buddy-pounce' feature. www.sourceforge.net



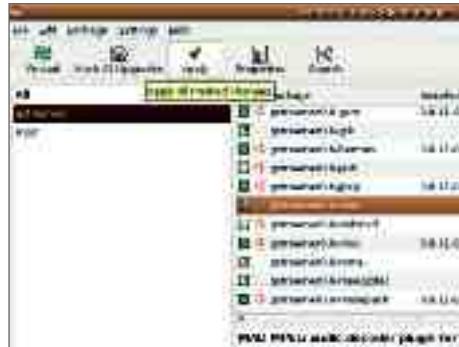
1 The key to installing software in Ubuntu, and many other Linux variants, is the online repository. This is a library containing purpose built packages. Packages are installed and downloaded using a 'package manager', and Ubuntu's is snappily called *Synaptic*. It can be started from the **System→Administration** menu.



2 *Synaptic* will ask you for a password. You need to enter the user password you typed when you installed Ubuntu. After this, you should see the main *Synaptic* window. The left panel lists broad package sections, such as graphics or multimedia. Selecting a section on the left, will list the packages each section contains on the right.



3 To add some of the packages that aren't included by default, we need to enable extra repositories. From *Synaptic*, click on **Settings→Repositories** from the menu. This brings up a list of enabled repository locations, but not the ones we want. Click on the **Settings** button, followed by **Show disabled software sources** to show them.



4 Once you've closed the *Settings* window, you should notice that the list of repositories has grown. The two we're after are **Universe** and **Multiverse**, and you need to click the tick-box to the left of each binary site to enable them. Finally, download the latest list of files with **Reload package information** from the **Edit** menu.



5 After the list has updated, you can now install software from the new repositories. For example, to add MP3 support, just search for **gststreamer-mad**. A single package will be listed to the right. Click on the small icon to the left of the package and *Synaptic* will automatically select any dependencies. Click on **Apply** to install.

6 To install *Macromedia Flash*, perform a search in *Synaptic* for **flashplugin-nonfree**, then select the packages and click **Apply**. It's the same for Java – and there's not a single system restart in sight. To install *Realplayer*, you need to go to www.real.com, navigate to the Linux version and follow the on-screen instructions.

Missed a Workshop?

Intrigued by the latest 3D cards? Tempted by personal video players, but don't know which one to plump for? Need to remedy your latest bout of ham-fisted rig DIY? Help is at hand – *PCFormat* is the only magazine you'll ever need...

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Luis Villazon
PATENTED THE WEARY SIGH

Ask Luis...

ALL YOUR PC QUESTIONS ANSWERED

Pub Quiz

Suss out these tech teasers over a pint

1 What was ENIAC's daily electricity bill?

- a) \$5
- b) \$60
- c) \$200
- d) \$10,000

2 Which top-level domain has the second most web pages, after .com?

- a) .gov
- b) .org
- c) .edu
- d) .tv

3 Which manufacturer made the first laptop to weigh less than 1kg that ran Win95?

- a) Hewlett Packard
- b) IBM
- c) Sony
- d) Toshiba

4 In what year did the videogame market crash?

- a) 1977
- b) 1980
- c) 1984
- d) 1987

5 Put these in order, from smallest to largest

- a) Petabyte, exabyte, zettabyte, yottabyte
- b) Petabyte, zettabyte, exabyte, yottabyte
- c) Exabyte, petabyte, zettabyte, yottabyte
- d) Exabyte, petabyte, yottabyte, zettabyte

Answers on page 129

Free technical support

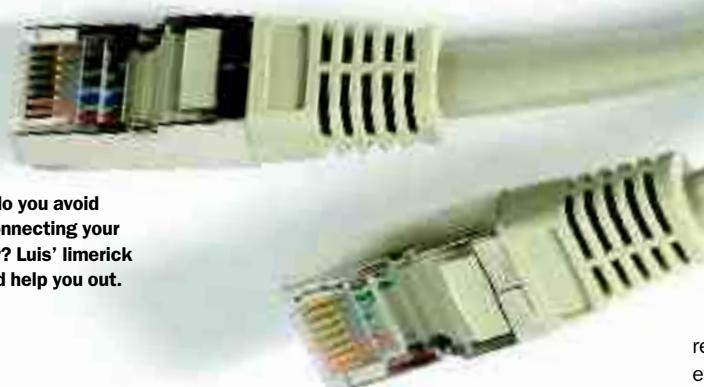
Got a problem with your PC? Write to Luis, or better still drop him an email. Assuming you can get your PC to work, that is...

pchelpline@futurenet.co.uk

PCF Helpline
30 Monmouth Street
Bath, BA1 2BW

Don't panic

Abandon all hope of a civil reply, ye who enter their technology queries here. Luis Villazon tells it how it is. Dare you ignore his sage wisdom?



How do you avoid disconnecting your router? Luis' limerick should help you out.

NETWORKING Crossed wires

Q When linking a router and a switch, does one use a patch cable or a crossover cable? I know that it's a crossover cable between two switches (and the reason for that) and would assume that it's the same between a router and switch but I just want to check with someone knowledgeable before I go and do something stupid (such as buying the wrong cable).

KIERON THWAITES
ron2k@webmail.co.za

A There's a useful mnemonic that you can use to remember which kind of cable you need to properly remedy this situation. It goes:

With a peer-to-peer connection do, Not use cables that are straight-through. Instead, the thing that you will need, Is the (slightly rarer) crossover lead. Routers are internally crossed; Use normal cable or all is lost.

receive simultaneously, doubling the effective bandwidth.

When you connect a switch to another switch, you need a crossover cable, so that the receive and transmit pins can be uncrossed, ready to be recrossed at the second switch. This can sometimes happen with some hubs too, it depends on how they are wired.

However, in a devastating act of rug-pulling, I should now like to add that hardly any of this ever matters these days, because most network kit uses auto-sensing ports that work out which kind of cable you are using and can configure itself correctly to compensate.

OPERATING SYSTEMS In defence of Linux

Q I normally love your great wit and fantastic replies but I was slightly put off by your answer to David Patterson in the PCF182 issue regarding dual-booting Linux. I'm not one of those diehard Linux users, I'm one of the many who has used Windows from the days of Win 3.x. Back in the old days, Linux was for the real technical geek, but I want to point

out that these days Linux has made leaps and bounds to become more user friendly. Just take a look at Linspire 5, Xandros 3, Mandriva 2005 or 2006 and I rest my case. I also agree that Linux still has a long way to go before being as easy as to use as Windows install, especially when it comes to installing additional software. But if the user wants to write letters, check email, surf the net, play a couple of games, watch a movie, then I believe that Linux is a good alternative to Windows, and Linux is also far more secure. I'm running Linspire, SUSE 9.2, Xandros 3 and Mandriva 2006 alongside Windows XP and Linux has never crashed in the six months I've been using it. Compared to Windows, it's as solid as a rock.

I can understand if you're not that keen on Linux yourself, but I was disappointed that you were so blatantly dismissive of how far Linux has come. Or maybe you have a hidden motive for constantly denigrating Linux?

PHILLIP CHANDLER

phillip.chandler@ntiworld.com

A My very poorly hidden motive is that I am lazy. The older I get, the lazier I become. In another couple of years, I'll be hooking myself up to a ventilator to save the trouble of breathing. I'm not quite there yet but I'm certainly too lazy to waste much time trying to get a Linux distro up and running. Telling me that it is not as bad as it was, is very much like saying that your dog's bum doesn't smell quite as much as it used to.

There are only two kinds of people running Linux. The ones that like a challenge for its own sake and

the ones that distrust anything produced by Microsoft. I suffer from neither of these vices. There may come a day when Linux is more than a way to give Bill Gates the finger but I'll make that judgement myself. My guess is that you have an agenda of your own here. Your claim not to be a diehard fan is somewhat at odds with the fact that you have four separate distros installed, it seems to me.

OS TWEAKS

Portable programs

Q In PCF181, R Schlag asks how he can install a program on his Flash drive and run it from there, to which you reply that he can't. Nonsense. You then go on to add that any application will write things to the registry. This is also nonsense.

Next you mention the process behind installing Windows, which wasn't what he was writing in about. Anyway, if what a program needs to run is already present in Windows (and there is a lot already present) there is no reason for it to write to the registry (or Windows directory, or even the dreaded My Documents folder). For sure, a lot of programs do, but they don't have to. I have been chasing the programs which didn't write to the registry for years. It's much easier to restore Windows without having to bother about all those settings, and to access programs from a shared network.

It seemed I was alone in this endeavour, sure there were registry-avoiding programs around, but not many (though, incidentally, most of id's games can be run from a directory – just copy the game somewhere else) – however that is

thankfully changing with the advent of USB sticks and drives. More and more apps are cropping up on the net, and sources for them. Like this one: www.portablefreeware.com.

PJ
nicepumps@gmail.com

A That's actually quite interesting. However R Schlag was actually asking how he could install programs from the PCFormat cover discs to a USB key. And since we don't restrict the disc to just programs from portablefreeware.com, the answer remains that he can't.

While it is true to say that there are some programs that don't write to the registry, the overwhelming majority of them do. In fact, Microsoft's own developer guidelines require them to if they want to use the "designed for Windows XP" logo, not least because it is required by the Add/Remove programs applet.

So my answer wasn't "nonsense" and I'm quite cross with you for saying so. But I'm printing your letter anyway because I think flash-installable apps fill a useful niche. Hopefully, this will also make me sound magnanimous and you distinctly churlish.

OVERHEATING

Warranty restrictions

Q My graphics card (a Radeon 9800Pro with Omega 2.6.42) keeps locking up and not responding to driver commands. I've had a number of opinions about this. Some people say that the graphics card may not be sitting in its slot properly, while others have told me that it may be due to the lack of ventilation in my case. The only problem with these answers is that I can't do anything about either of them. I bought my system from www.aria.co.uk. And it comes with a warranty which is valid as long as you don't open the case. Now I'd like to open it up, obviously, but as I'm only 14 and my mum doesn't trust me, I can't. The situation's really quite annoying – curse being young! This problem only occurs when I'm playing graphically demanding games: Counter-Strike Source is the main offender, often crashing five minutes into a game.

The screen will freeze, the last half-second of sound will be repeated, and this carries on for about 30 seconds. Then the screen goes black and the speakers make odd

FAQ

Buckyball fuel cells explained



A methanol-powered laptop could be a reality one day.

What are they?

Cells that convert the chemical energy stored in methanol into water, CO₂ and electricity. This has two advantages: near-instant recharging (just add more methanol) and higher energy densities.

Energy density?

That's how many joules you get per gram of fuel. Methanol and petrol have higher energy densities than those used in batteries, but once you add in the weight of an engine and a dynamo, the density drops off. That's why there are no petrol-driven laptops.

Will fuel cells will change this?

One day. Prototype cells have been around for a while but their energy density is still low, and the cells have tended to leak flammable methanol. The new system developed by Sony uses buckyballs (nano-spheres made from linked carbon atoms) to stabilise the fuel.

Didn't NEC do that a few years back?

Yes, but the product never made it out of the lab due to manufacturing difficulties.

Will buckyballs work?

Sony claims they virtually eliminate methanol leakage. Now all that is needed is somewhere to buy methanol refills and a complete change to airline regulations to allow methanol-based fuel cells to be carried on planes.

Read more at:
tinyurl.com/77c7k

Bedside table

This month, Luis is reading...

Degunking Windows (Second Edition)

Authors Joli Ballew and Jeff Duntemann Publisher Paraglyph Press
Price 12.59 ISBN 1-933097-07-8

I was pretty sceptical about this book – "never read books with Fifties American housewives on the cover" is a motto that has always served me well. Truth be told, there is a fair amount of the equivocation and filler that pervades most of the beginner's guides out there. There's also some fiddling-for-the-sake-of-fiddling that will swallow all your weekends with very little to show besides insufferable smugness. However, I grudgingly concede that if you did everything that this book recommends, your PC would probably be running better than before.



■ popping sounds. I've got Creative surround-sound speakers, if that's at all relevant.

I'm just wondering if there is anything I can do on the software side of things to sort this problem out? I've installed the latest ATI drivers, and even switched to the Omega ones, having heard recently that they're more supportive of crashing cards.

TOM FURNIVAL

webmaster@
the-random-place.com

A If you have a computer under warranty with a fault, return it. I'm not sure that this is fault of the 3D card; it sounds more like general overheating to me. You should demand either a returns number so that you can send your machine for repair or assurance that

you can open the case to fit more fans without affecting your warranty.

MODEMS

USB detection

Q I am on broadband with Wanadoo and I can't get a connection unless I pull the modem lead out of the back of the computer before I switch it on. There are two green lights on the modem and I can't get them to turn on unless I disconnect the lead every time before I switch the PC on. I hope that you can help, it's been like this for 12 months.

MICHAEL TAYLOR

michael@michael62.wanadoo.co.uk

A Take a USB modem and add a flaky USB chipset on the motherboard and you

have a modem that isn't detected on a cold-boot. A better recipe would be to take a USB modem and put it in the bin before adding a proper modem that plugs into the Ethernet port as the good Lord intended*. You could replace your motherboard instead, of course, but what kind of solution is that? No, you mark my words. USB modems are evil. Evil, you hear?

OS TWEAKS

A sore thumbnail

Q On all my picture files, I get a "Thumbs.db" file attached. What is this mysterious file, and can I hide it, as it's getting on my nerves?

TOM MURRAY

tojaca@tiscali.co.uk

A It's a cache file that stores the thumbnails of all the images so that they can be displayed as icons. You can turn it off by clicking **Tools**→**Folder options** from the menu of any Explorer window and ticking **Do not cache thumbnails**. This saves a

me a new modem, saying the previous one is faulty. The new one however is no better. Is there a solution? Do I need another piece of kit to eliminate the problem?

TREVOR YOUNG

tcyoung@onetel.net

A Your filters aren't filtering, I think. The job of a broadband microfilter is to separate the bottom 4KHz of the signal spectrum (which is all that you need for voice) from the rest of the bandwidth (which is used by the modem). The hissing you are hearing is some of your data traffic leaking through to the phone because the filter isn't chopping the voice channel at 4KHz accurately enough. There should be a filter plugged in to the first phone socket in the house, where the phone line enters the building. If there is, try swapping it for one of the others that were supplied with your modem in case one of them is faulty. If your PC is plugged into an extension socket on the other side of the house, it is a good idea to have one microfilter on

Network diagnostics

What to do when your net connection is broken



1 Open the diagnostic

The Network Diagnostics tool will get you back online in no time. You can access it by clicking on **Start**→**Help and Support**→**Use Tools** to view your computer information and diagnose problems. Then click on **Network Diagnostics** from the list on the left-hand side of the screen.



2 Run the scan

Click **Scan your system** and the diagnostic will run through some basic tests. This involves pinging all the various servers at your ISP, running loopback tests on your network adaptor and also checking the Windows Internet Naming Service, over your LAN. Once this is complete, it's time to move on.



1 Check the results

The report that comes back will let you dig around in your PC's settings to find out the specifics of the items that have failed. This system is showing no response from the DNS server, which shows the importance of the Sixth Rule of Troubleshooting: don't believe an error message over a working system.



2 Tweak your scan

If your diagnostic repeatedly shows a false positive on some of the tests because of some peculiarity of your network, you can click on **Set scanning options** to omit some of the tests. Clicking verbose mode will report the values of lots more registry keys but it's certainly not for the faint-hearted.

"Boot times are affected by the number of DLLs Windows must load, not hard disk partitions"

microscopic amount of space in exchange for loading the CPU slightly more by forcing it to regenerate the thumbnails every time you open the folder. (Ooh, I'm getting terrible *déjà vu* – didn't we cover this really recently?) Since the disk space the thumbnail cache files occupy is essentially irrelevant, the real disadvantage of leaving them on is the clutter they add to your folders. Far better then, to simply hide them from view by simply selecting **Hide protected operating system files (Recommended)** from the same menu. You know, it astonishes me the number of people who reflexively turn this setting off. It's almost as if Microsoft's recommendation is all the incentive they need to do the exact opposite.

the master socket and another on the extension. This guards against the opposite problem, where the filters are working correctly but the modem is generating some noise below 4KHz. This shouldn't happen and you have replaced your modem anyway but I mention it for the sake of completeness.

BATTERIES

Fast drain

Q Just read about battery drain; I have the same problem with my Samsung Digimax A6 camera. I use Uniross 2500 rechargeable batteries and they still drain after about three minutes of use – why?

HILARY CAIG.

caig_h@hotmail.com

MODEMS

Broadband hiss

Q I have recently changed to broadband for internet access. The ISP sent me a modem and filters to install. However when the computer is switched on I get a hissing noise on our phone while the called person has a clear line. The ISP has sent

A Because your camera has a short-circuit somewhere. Uniross 2500s are in the premier league of rechargeable batteries and NiMH should perform much better than rechargeable alkalines because their internal resistance is lower so they can deliver higher current. Try this: plonk a pair of ordinary Tesco AA batteries

in and see how long they last. It should be something like just under a minute if I'm right.

If by some extraordinary happenstance you find that alkalines are actually outlasting your other rechargeables, then there is something wrong with your batteries. This would actually be a good thing because rechargeable batteries are much cheaper than digital cameras. But don't get your hopes up, because it's a short in the camera, I'm telling you.

SYSTEM RESTORE Registry cleaning

Q I think my PC may be harbouring some suspect registry entries. How can I establish those that are genuine and required to operate under Windows ME from any bogus ones?

KEN WHEELER
kenwheeler@btinternet.com

A Well, you could copy the system.dat and user.dat files that comprise the registry and then delete the Windows folder and reinstall from scratch. Then reinstall all the software you use and compare the system and user.dat that you end up with. The differences between the two won't all be down to malware and viruses – in fact most of it will be nothing more sinister than old settings from applications that have long been uninstalled. But hopefully this process will take so long and be so tedious that you will eventually conclude that knowledge of your registry's microscopic anatomy is of remarkably little day-to-day use. And at that point, you will almost have evolved to the same level as sophistication as the rest of us. I say "almost" because you will, of course, still be running Win ME.

Which is by far my least favourite flavour of Windows.

REINSTALLING Recovery is not backup

Q My computer crashed a couple of days ago and I had to use the recovery disk to set up the system again. All of the programs I had were put into a file called Winold, I am just asking how I can restore the programs from this file.

MATTHIAS HOLFORD

matthias@nmholford.abelgratis.co.uk

A Are you sure all your stuff is in Winold? Most recovery CDs just rename the Windows folder and replace it with a factory version. If the hard disk hasn't been reformatted then your applications will probably still be there. But they might as well not be because all the DLL files have been moved to Winold and you are running with a vanilla version of the registry. Theoretically, you could pick out the files and registry keys you need and get the whole thing working again. But reinstalling the apps from the CDs is going to be a great deal faster.

DISK ORGANISATION Holy partitions!

Q Luis, I agree with your statement that Folders are a good way to go. That said, I disagree with you on partitioning. I partition religiously. When I run Speed Disk or Defragment, do I want to do it for 20GB or 60GB (or more nowadays)? When I run ScanDisk, do I want to be able to pick where to scan, or do I want to wait for it to scan 60GB when it could just scan

20 or even less if I choose to set partitions that way? The more data there is on my boot drive, the longer it takes to boot up. Do I want to wait while it reads all the useless stuff? And worst of all, batch deletes. When I do a batch delete, I usually both write zeroes to my free space, and defragment. Imagine the difference in time between 20GB and 60GB in this operation. So, tell me again about the "no benefits" part to partitioning.

NO NAME SUPPLIED

Pirana2671@aol.com

A Wow. I'm actually quite scared by your letter. If you had said that you partition after a careful and considered examination of the arguments for and against, I would have been able to dismantle your flimsy manifesto point by point using my socket-set of rational argument. I could, for example, have said that defragmenting your hard disk is very nearly as useless as partitioning. Or that ScanDisk takes a trivial amount of time when only checking the filing system (and when you are performing surface tests on the data area, you most certainly do want to check the entire disk). Boot times, I could have reasoned, are affected by the size of the registry and the number of DLLs that Windows must load, not by the number of subdivisions you have made in your data area.

And so it would have gone. But I can see that in your case this would be just so many wasted column inches. You partition religiously. Religious? I think that the word you actually meant to use is "obsessively" but either way, the only value to this reply is to warn off everyone else before your preposterous fate befalls them. **PCF**

VIRUS OF THE MONTH

Avoid the next PC pandemic



If your PC gets this virus, don't panic, it's easily removed.

Name Gurepirls
Aliases Trojan.gurepirls
Type Trojan
Infects Windows 2003/XP/2000/NT/ME/98/95
Number of outbreaks <50
Virulence Low
Lethality Low
First detected 5/12/2005

Symptoms

Gurepirls sends your email details to www.puregirls.tv, along with a list of email addresses from your address book. It uses the former to register you for the puregirls.tv porn site and the latter to create a mailing list so that your friends and colleagues can be spammed with emails containing the Trojan as an attachment. This isn't the same as a worm, since the Trojan relies on the owner of the web domain to send copies of itself out, based on the information it sends back. To the end-user, that distinction is fairly irrelevant.

Prevention

You're not still opening unsolicited email attachments are you?

Cure

If you have Gurepirls, an image will pop up on your screen displaying an advert for the site in Japanese every 30 seconds. Don't worry though, the image itself isn't pornographic. You can disable the Trojan by deleting acl.bmp, acl.ocx, aclservice.exe and acl.inf from the System folder.

More info
tinyurl.com/9axgzb

Luis and Ned



Words Luis Villazon Pictures Mark Mitchell

state of the art #9

THE LATEST TECHNOLOGY EXPLAINED

Gimme Viiv

Intel's new media platform has arrived. James Morris explains how it all fits together

The PC industry has had its eye on your living room for quite some time. Gateway 2000 was selling PCs aimed at the lounge in the 1990s, and Microsoft's Media Center Edition has already been around for a couple of years. But until now, apart from some adventurous use of small form factors and widescreen TFTs, the media PC was still just a PC with a few extra widgets to please the couch potato. With the launch of Viiv, however, Intel has defined a platform specifically for your lounge.

Viiv should be likened to Centrino, in the sense that it brings together separate technologies into a single branded entity. However, there's considerably more to it than just the mobile processor, chipset and wireless networking which make up Centrino. The most surprising thing about Viiv is that it has a dual core CPU as standard. This has obvious advantages for a home media server, which may be called upon to record and play video locally at the same time as serving recorded content across a network.

PROCESSING POWER

However, the range of supported Intel processors includes both the existing Pentium D and Extreme Edition dual-core implementations, plus the dual-core version of Pentium M, codenamed Yonah (reviewed on p66). This has a knock-on effect on chipset requirements as well, with 945G, 945P or 955X needed for the Pentium 4-based processors, and the new Calistoga for Yonah. But in this respect, Viiv is nothing particularly radical.

Beyond the core logic, the specification unsurprisingly requires Intel HD Audio with at least 5.1 analog output or S/PDIF. A Windows XP MCE-compatible remote is also a requirement, along with the operating system itself. However, Apple is rumoured to be working on a Mac Mini-based on the Viiv platform. There have also been reports that Intel is developing a version of Viiv running Linux with Taiwanese manufacturers, to reduce the cost of entry.

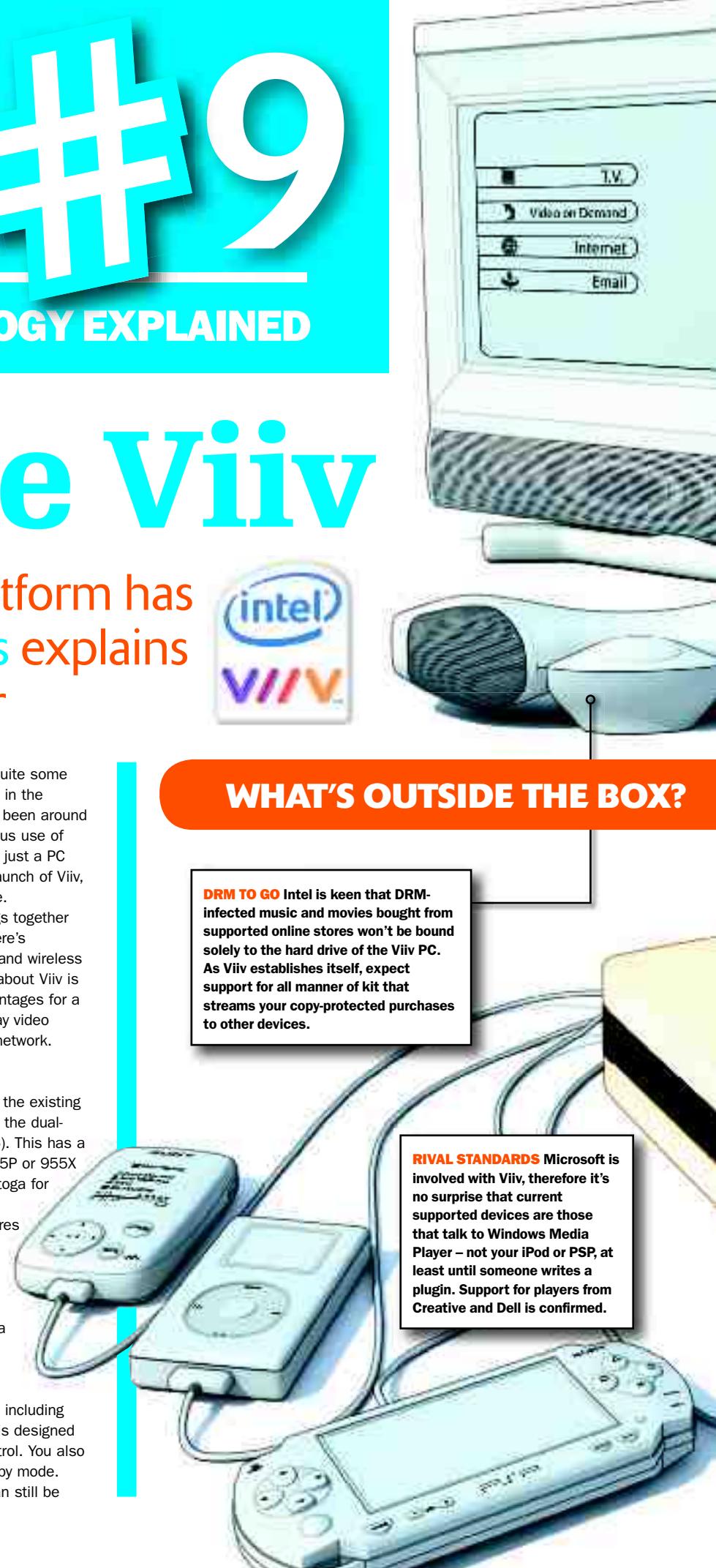
Viiv also requires a lot more control over the software environment than Centrino. The Intel driver stack is a necessity, including drivers for HD Audio, RAID, graphics and networking. The latter is designed to facilitate setting up a home network using just a remote control. You also get Intel's instant on/off functionality, which isn't another standby mode. Instead, it turns off visible signs that the system is on, but it can still be

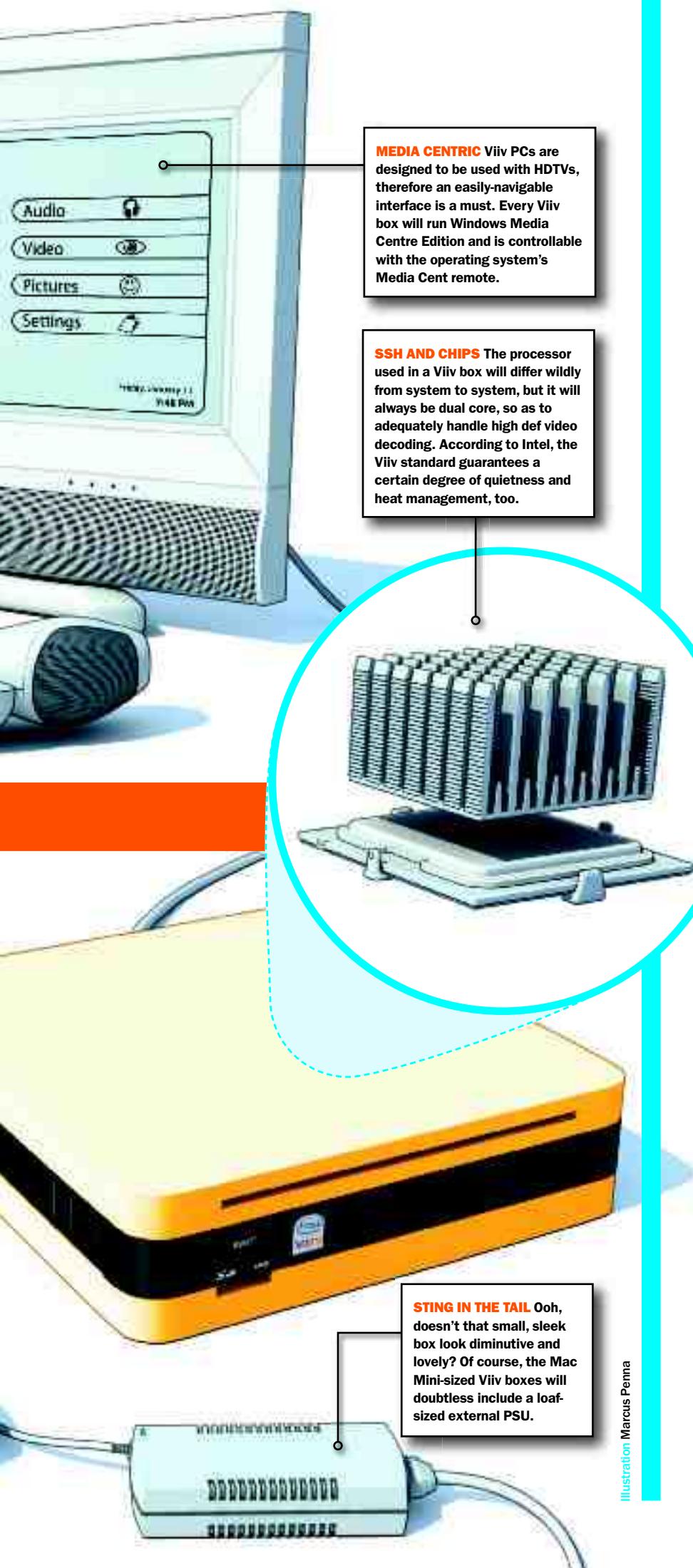


WHAT'S OUTSIDE THE BOX?

DRM TO GO Intel is keen that DRM-infected music and movies bought from supported online stores won't be bound solely to the hard drive of the Viiv PC. As Viiv establishes itself, expect support for all manner of kit that streams your copy-protected purchases to other devices.

RIVAL STANDARDS Microsoft is involved with Viiv, therefore it's no surprise that current supported devices are those that talk to Windows Media Player – not your iPod or PSP, at least until someone writes a plugin. Support for players from Creative and Dell is confirmed.





doing things in the background. So if TV programmes are being recorded or someone is accessing stored content, that still works at full speed. But the PC appears to be off from the outside – unless it's really noisy, of course.

DRM ON

Intel's Viiv also comes with a healthy dollop of controversy as well. Viiv PCs must use Intel's Integrated Media Server, which makes a Viiv PC more interoperable with other home media devices. The Media Server incorporates a transcoding engine which automatically converts your audio and video files to a format compliant with Digital Living Network Alliance (DLNA) standards. This is designed to make playback on other DLNA-compliant devices seamless, useful as the DLNA includes computing names, such as Microsoft, but also consumer electronics companies like Bang and Olufson and Kenwood.

On the surface this seems a good thing, as it makes remote access to media work on compatible devices very easy, but some analysts have expressed concerns over restriction. Although DLNA specifies images in JPEG format, audio in LPCM, and video in MPEG2, other formats are available as options, including Windows Media. Intel claims, though, that Viiv lets you choose your transcoding format, and adjusts itself to the third-party devices you use with it.

DRM is shaping up to be the digital hot potato of the 21st Century. Intel has told us that the content you put on your Viiv PC won't automatically be converted to Windows

Media with DRM attached, but here again some analysts are worried. So although the Viiv branding guarantees that certified media devices will work with your Viiv PC, it might also be guaranteed that they are the only devices that do.

SMALL, OR PERFECTLY FORMED

Although Viiv has plenty of stipulations about component compatibility, one thing that hasn't been defined is form factor. Intel exhibited Viiv at IDF in late 2005 on a Mac Mini look-alike, which is the size many of us would like our media PCs to be. But the first officially released Viiv PC, the Packard Bell ixxtreme Gold S1919 is the traditional desktop shape, presumably to accommodate the video-friendly 7200rpm 300GB hard drive, 10 USB ports and 7.1 audio. The platform doesn't constrain the form or type of the device, it only ensures interoperability.

Like Centrino, Viiv is as much about marketing as it is about technology. With Centrino, Intel successfully associated its Pentium M notebook processor with wireless networking and the concept of mobile computing. The company hopes to do something similar with Viiv. The aim is for the brand to be synonymous with the future of digital entertainment, from PVRs, to home media networks, to portable players.

Clearly, however, Intel isn't the only company vying to place its branding at the hub of your digitally mediated lifestyle. AMD Live!, announced recently, is the green corner's response, and it isn't much of a leap to see traditional CE companies having an interest as well. After all, Viiv has more than a passing resemblance to what Sony has been trying to do with its VAIO branding for years. Still, Intel is rumoured to be putting over \$300 million into the Viiv ad campaign, and major US players such as MTV Networks, AOL and ESPN have already signed up to provide branded content. We'll bring you news of which UK-based media providers have committed to Viiv next month, but one thing is for sure: you won't be able to escape Intel's advertising offensive throughout the rest of this year. **PCF**

Illustration Marcus Penna

NEXT MONTH
UNIFIED SHADERS
WE LOOK AT THE ENORMOUS
UPCOMING CHANGE IN GRAPHICS
CARD ARCHITECTURE.



Black Gold DVB-T MCE
£59
p135



Dabs DabsValue Digital TV/PVR Card PCI
£60
p135



AverMedia AverTV DVB-T USB2.0
£65
p136



AverMedia AverTV ExpressCard TV Tuner
£66
p136



AverMedia AverTV Hybrid+FM CardBus
£67
p137



Hauppauge WinTV-HVR 900
£68
p137



Pinnacle PCTV 310i
£71
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Leadtek WinFast DTV1000T
£72
p138



Trust TV-2100
£74
p139



Terratec Cinergy Hybrid T USB XS
£93
p139



Turn on, tune in

Not all TV tuner cards are created equal. Dean Evans sorts the ageing analogue receivers from the new-fangled DVB-T decoders

The PC is a unique device. Not only is it extraordinarily flexible and endlessly upgradeable, it embraces some of today's biggest tech-trends. The PC is booting out the DVD player and killing off the hi-fi. With the addition of a TV tuner, it can also outgun the television and the DVD recorder.

Choosing a TV card should be a simple matter. But do you want an analogue or digital card? Internal or external? What application will you be running? The software you want to use will ultimately determine the type of card

that you should buy. Or, to put another way, the type of card you buy will determine the software you can use.

Because digital transmissions are broadcast alongside analogue signals, bandwidth is limited, so Freeview coverage is patchy. To see if you can receive digital TV via Freeview, use the postcode checker at www.freeview.co.uk.

DVB-T is the future of broadcasting, and coverage will improve as the big switchover begins in two years' time. This process will see analogue signals shut off in southern Scotland, Cumbria

and the Isle of Man to be replaced by the digital-only Freeview service. More regions will then follow suit, with the Ulster and Tyne Tees regions the last to switch in 2012. The full timetable for switching off analogue telly in the UK is detailed below:

2008 Border

2009 HTV Wales, West Country, Granada

2010 Grampian, HTV West, Scottish TV

2011 Anglia, Central, Yorkshire

2012 LWT, Meridian, Tyne Tees, Ulster

With the government planning to extinguish analogue TV signals from

From 2008 onwards, you'd be forgiven for wondering why we've included any analogue tuners in this Supertest at all. But if you want to continue to watch terrestrial TV or you wish to pipe a cable (NTL/Telewest) or a satellite signal (Sky) into your PC then you'll need to use an analogue TV card.

Getting an external video feed into your PC is easy – connect a coaxial lead from the RF output on the set-top box to the aerial socket on the back of the analogue card. You can also hook a standalone Freeview box to an analogue tuner in the same way. Crucially, you'll need a card that supports an IR emitter/IR blaster, which is used to send IR commands to the box.

Both digital and analogue TV tuners typically capture and encode their video in hardware, using the MPEG2 format. MPEG2 is still the standard for video –

HOW WE TESTED

A good TV tuner delivers more than just a good picture. It's got to be flexible and futureproof, too



Tuner type

Today's TV tuners come in a variety of guises – internal and external; analogue or digital (or both); single or twin tuner; PCI, ExpressCard or USB interfaces. No one type is better than another – it depends what sort of video signal you intend to route into your PC. Freeview, for example, requires a DVB-T tuner; Sky Digital requires an analogue tuner.



Compatibility

The majority of the TV tuners in this test come with their own capture software – AverMedia's cards use their own AverTV app, Terratec's Cinergy USB tuner comes with CyberLink's PowerCinema 4.0. These are good starting points, but lack the flexibility of more advanced software, such as ShowShifter, MythTV and Microsoft's Media Center Edition 2005.



Recording options

While all of the TV tuner cards here capture and encode video in MPEG2, a few of them also encode directly into MPEG4 video codec. We also checked to see what functionality the default video capture software offered and whether it included typical PVR options such as the ability to pause/rewind live TV and the provision of a seven-day EPG.



Picture quality

Last, but not least, if the hardware encoder on any of these cards isn't up to the task, we tell you about it. Tested in Bristol, DVB-T cards were used with Freeview signals coming from the Mendip transmitter, while analogue cards were used with analogue terrestrial broadcasts. Where appropriate, tuners were also tested with Media Center 2005.

it's used as the basis for both DVD-video and standard definition digital broadcasting. But while it's a high-quality video codec, it's also a bloated one – an hour of MPEG2 can swallow up to 2GB of hard disk space. That's why some newer TV cards have begun to encode analogue signals in the more advanced MPEG4 codec, which cuts down on disk space whilst retaining a high-quality picture.

THE FUTURE IS DIGITAL

Does MPEG4 encoding matter? It depends on what you want to do with your analogue TV content once you've recorded it. If you plan to watch it on the PC that encoded it, MPEG2 will be fine. But

"A TV tuner can turn your PC into a powerful media server, allowing you to stream TV around your house"

MPEG4's reduced size means that video files are more 'portable'. They can be streamed to digital media adaptors (like D-Link's DSM-320RD) over an 802.11g network; or copied to portable video players and PDAs.

A few considerations still need to be addressed. First, do you want an internal or an external solution? For a desktop PC, a PCI card like GDI's Black Gold DVB-T MCE is perfect. A USB-based TV tuner is also an easy way to add a second TV

tuner to your PC system, enabling you to record one channel while watching another. While twin analogue PCI tuners are available, twin digital tuner cards are only just beginning to appear in prototype form, and even these are PCI Express-only models. If you have two PCI slots in your PC, a brace of tuners is still the best way to turn your PC into a serious media machine.

Lastly, we mentioned earlier that the type of card you buy will determine the type of software you can use. Most of the cards here ship with their own TV tuner/PVR software. But most can also be used with apps like ShowShifter, while others are certified compatible

with Microsoft's Media Center Edition OS, which uses BDA driver architecture. Decide what sort of software you want to use before thinking about buying a card.

Installing a TV tuner can turn your PC into a powerful media server and, with the addition of a digital media adapter plugged into your TV, you can record TV and then stream it around the house. This is the 'digital home' in action. Choosing a good TV tuner is the first step.

From Freeview to FreeSat

Why satellite cards are the way to PC HDTV

There's been a lot of talk about HDTV recently. BSkyB is preparing to launch its Sky HD service in 2006; Telewest is already conducting a small HD trial over digital cable. But for most of us, 2006 won't be the year of HDTV. While US viewers already have access to HDTV broadcasts, the slim bandwidth allotted to Freeview in the UK means that a similar HDTV delivery system here is nigh-on impossible at present.

Satellites, on the other hand, have bandwidth to

spare, so the BBC and ITV are planning their own 'FreeSat' service to complement the existing Freeview service. Hauppauge is already anticipating FreeSat with its announcement of the WinTV Nova's card that's designed to receive free-to-air satellite TV. Crucially, the this FreeSat-friendly card is also compatible with HDTV, broadcasts of which are expected to be added to the service in 2006/7.

The BBC already broadcasts an unencrypted

channel line-up via satellite, including BBC One, Two, Three, Four, CBeebies and BBC News24, plus its radio channels. ITV plans to decrypt its four digital channels in 2006 when FreeSat officially launches. Channel 4, however, has an existing deal with BskyB, which means that it won't be adding Channel 4, E4 and More4 to the service any time soon.

For more detailed information about Hauppauge's FreeSat card, see www.hauppauge.com.



US-style Freeview HDTV won't hit the UK for at least a few years.



Black Gold DVB-T MCE

Price £59 Web www.blackgold.tv

While GDI's Black Gold tuners are less publicised than the AverMedias and the Hauppagues of this world, they're no less accomplished. Black Gold DVB-T cards are the tuners of choice for Evesham's excellent eBox Media Center PCs – a pair are fitted as standard to enable two-channel recording.

The Signature Edition Black Gold DVB-T MCE card can be bought online from GDI for £59. It's supplied without a software CD, cables or antenna. Instead, WHQL BDA drivers for Media Center 2004/2005 are downloaded direct from the Black Gold website and need to be installed before you fit the card, which is a half-height PCI affair with a coaxial aerial input and an S-Video input.

If you're looking for a TV tuner that will embrace Media Center, the DVB-T MCE should be top of your list. It works perfectly with Freeview and, if you're lucky enough to have a strong DVB-T signal and a good aerial, the picture quality is clear and well-defined. It might

DETAILS

Tuner type	Digital terrestrial (DVB-T)
Number of tuners	1
Interface	PCI
Video encoding formats	MPEG1, MPEG2
Video capture software	Windows Media Center 2004/2005
MCE compatible	Yes
Connectivity	Coaxial aerial, S-Video
Extras	None

lack the extra analogue and FM options of its rivals, but the DVB-T MCE is designed to do one job and do it well.

For an extra tenner, you can get the Black Gold Media Centre. This is the full package, supplied with standalone PVR software and a Black Gold remote control. This software also includes scheduled recording and live TV pause/rewind options, with the option of DigiGuide (www.digiguide.com) EPG intergration for anybody who subscribes to its online listings.

Black Gold cards never attempt to be jacks of all entertainment-related trades. Black Gold is also one of the

only companies to realise that Media Center is the superior PVR platform and, in this barebones version, it doesn't force its own software upon you. There's a purity of performance here that's inescapably appealing.

89%

PCF says... "A no-nonsense DVB-T tuner. Ideal if you're building an MCE 2005 system."



top gear
PCFormat



Dabs DabsValue PVR Card

Price £60 Web www.dabs.com

What's in a brand? Is a Leadtek, Hauppauge or AverMedia-branded TV tuner better than a rebranded card from Dabs? Well, the big companies have got experience in designing and manufacturing cards, while Dabs (www.dabs.com) simply sells them. But look closely at the features and it's not so clear cut.

Ultimately, it's all about the tuner type, how good the MPEG2 picture is, and whether the price for these features is competitive. The DabsValue Digital TV/PVR Card is actually a Compro VideoMate DVB-T300 and, like AverMedia's Hybrid cards, you can use it in either

DVB-T or analogue modes. This dual operation gives it a flexibility that the Black Gold can't equal, and while it doesn't have the extra FM radio functionality that the Hybrid+FM brings to the table, it's a solid performer that fully justifies its inclusion in this test.

The DVB-T300 is supplied with an IR remote control and a software CD that includes the ComproDTV application (for video capture and timeshifting),

DETAILS

Tuner type	Analogue and digital terrestrial (DVB-T)
Number of tuners	1
Interface	PCI
Video encoding formats	MPEG1, MPEG2
Video capture software	ComproDTV (timeshifting, seven-day EPG, HDTV ready)
MCE compatible	Yes
Connectivity	Coaxial aerial, composite, S-Video
Extras	IR remote control, installation CD

ComproDVD 2 for MPEG2 playback and Ulead PhotoExplorer 8 SE for image editing. As usual, the own-brand PVR gets a point for effort, but it's worth investing in a more powerful system. The DVB-T300 supports BDA drivers, so it's Media Center-compatible. It also supports S3/S4 'wake up recording'.

The DVB-T300 also claims to be HD-ready, but a lack of broadcast HD content in the UK means that claim is hollow. The picture is decent enough with standard TV signals, though we should mention that some of the more obscure Freeview channels suffered from the occasional MPEG2 wobble.

That said, the performance of this DabsValue card comes as a pleasant surprise. It makes you realise that what sets any market-leading card apart is its array of bolted-on extras.

gold
PCFormat

91%

PCF says... "This card shows that there's often very little difference between PCI tuners."





AverMedia AverTV DVB-T

Price £65 Web www.averm.co.uk

AverMedia is one of the biggest hitters in the TV tuner market. The DVB-T USB2.0 is its flagship external model – a compact digital terrestrial box that's the size of two packs of playing cards.

It's not the smallest external tuner around; both the Cinergy Hybrid T USB XS and the WinTV-HVR 900 beat it for sheer dinkiness. Nevertheless, it takes full advantage of the bandwidth provided by its USB 2.0 connection to deliver quality MPEG2 hardware encoding. In fact, the USB cable supplied features two USB connectors – the second connector can draw more power from the host PC if required.

Because the DVB-T USB2.0 is an external device, it can be used with either a desktop or a laptop system. AverMedia supplies a portable antenna for the latter, although you might as well chuck this in the bin as soon as you've opened the box. As analogue terrestrial and DVB-T signals currently share the broadcast spectrum, the chances of

DETAILS

Tuner type	Digital terrestrial (DVB-T)
Number of tuners	1
Interface	USB 2.0
Video encoding formats	MPEG1, MPEG2
Video capture software	AverTV (timeshifting, seven-day EPG, PIP, HDTV ready)
MCE compatible	Yes
Connectivity	Coaxial aerial only
Extras	Mini terrestrial antenna, USB cable, infrared remote control, installation CD

top
gear
PCFormat

getting decent digital reception via the antenna are practically zero.

With access to a roof-mounted aerial, video performance is excellent. AverMedia's own AverTV software is easy to set up. But it's a barebones app, offering recording via a seven-day EPG and basic timeshifting. Like most digital products, there's a sluggish transition when switching between channels, but picture quality is good and (signal permitting) it's entirely judder-free.

Without a 10ft interface of its own, you'll barely use the supplied remote control. But usefully, the DVB-T USB2.0's MCE 2005 compatibility means that this box is a good solution if you want to add a second tuner to a media centre PC. A flash on the box

declares that the DVB-T USB2.0 is also HDTV-compatible, supporting 1080. But without a high-definition DVB service in the UK, this is about as useful as a waterproof teabag.

83% **PCF says...** "A good DVB-T tuner, but we would have liked analogue and FM support, too."



AverMedia ExpressCard TV

Price £66 Web www.averm.co.uk

For those of you who can't see the point of adding a TV tuner to a laptop, try using your portable PC (connected to a roof-mounted aerial) to record TV programmes in the evening, then unplug it and take your recordings with you as you travel.

AverMedia's latest laptop TV tuner is the first to use the new ExpressCard format which is set to replace the PCMCIA or CardBus standard. While this TV tuner is designed to fit into a 54mm PCMCIA slot it features the smaller ExpressCard/34 connection. It's why the card has an odd design, oddly reminiscent of a Tetris block.

Despite this advanced PC connectivity,

the AverTV ExpressCard TV Tuner boasts only a single analogue tuner. Nevertheless, like the other AverMedia products here it supports the enhanced PVR functionality that we've come to expect from modern TV cards. So while you can only receive the five standard terrestrial channels, you can pause programming on those stations and schedule recordings.



DETAILS

Tuner type	Analogue
Number of tuners	1
Interface	ExpressCard
Video encoding formats	MPEG1, MPEG2, MPEG4
Video capture software	AverTV (timeshifting, EPG, PIP)
MCE compatible	No
Connectivity	Coaxial aerial, composite and S-Video via cable
Extras	IR remote control, installation CD

top
gear
PCFormat

Like the DVB-T USB2.0 and the Hybrid+FM CardBus, this ExpressCard tuner uses AverMedia's own AverTV software.

While the video encoding is performed via software compression, because this is an analogue tuner, you rarely notice any performance issues. In addition to its MPEG2 encoding talents, the ExpressCard TV tuner is also capable of encoding to MPEG4. Video playback is smooth, whether video is piped in via the coaxial aerial, composite or S-Video inputs. A 'snapshot' function enables you to grab screenshots in sizes up to 720x576 pixels.

All in all, this ExpressCard model is a good first step in a new format. A DVB-T or Hybrid (analogue and digital) version will undoubtedly eclipse it in 2006, but as new laptops start to feature

80% **PCF says...** "This may be the first ExpressCard tuner, but it's far from future-proof."



AverMedia Hybrid+FM

Price £67 Web www.averm.co.uk

The Hybrid+FM CardBus represents the pinnacle of TV tuner performance, at least as far as laptops are concerned. As its name suggests, not only can it support both analogue and DVB-T signals, but it also adds FM radio reception to the mix.

Getting decent digital reception in the UK using the supplied antenna is nigh-on impossible. At least until DVB-T becomes the standard method of telly transmission come the end of 2012. But don't chuck this antenna out just yet. Because the Hybrid+FM's tuner can cope with analogue transmissions, you can realistically watch TV on the move, although you'll find you've got to site the aerial as far from the laptop as possible to minimise electrical interference.

Like the other two AverMedia products in this test, the Hybrid+FM uses the AverTV application to give you your TV recording and PVR functionality. There's no IR emitter provision, but all the usual options are available – 4:3 and 16:9 support, a 16-channel preview

DETAILS

Tuner type	Analogue and digital terrestrial (DVB-T)
Number of tuners	1
Interface	CardBus
Video encoding formats	MPEG1, MPEG2, MPEG4 (analogue only)
Video capture software	AverTV (timeshifting, seven-day EPG, PIP, HDTV ready)
MCE compatible	Yes (DVB-T only)
Connectivity	Coaxial aerial, composite and S-Video via cable
Extras	Mini terrestrial antenna, FM antenna, infrared remote control, installation CD



mode and video snapshot options. But to be honest, if you're serious about TV recording and playback, you'll dump AverTV for something more advanced.

While DVB-T video is encoded smoothly into MPEG2, with analogue transmissions you have the option of encoding into MPEG4. Similarly, the Hybrid+FM is fully compatible with Media Center 2005 and supports the new 'wake-up recording' modes (so it will resume recording from either S4 'Hibernation' or S3 'Standby').

Like the DVB-T USB2.0, AverMedia boasts that the Hybrid+FM is HDTV-ready, because it supports 1080i and 720p resolutions. There's no way to pipe an HD signal into this card at present, this shouldn't detract from the fact that the

Hybrid+FM delivers a quality picture. It's a little fuzzy perhaps, but good enough considering that video is encoded via software rather than dedicated hardware.

91 % **PCF says...** "Analogue and digital TV support with FM radio. The ultimate laptop telly card."



Hauppauge WinTV-HVR 900

Price £68 Web www.hauppauge.com

The other really big hitter in the TV tuner market is a company that seems to have a tuner for every occasion – it produces all manner of PCI DVB-T boards, external USB 2.0 models, twin tuner cards, even a new satellite card supporting a FreeSat service that hasn't even been launched yet – now that's forward-thinking.

The WinTV-HVR 900 doesn't look much like a TV tuner. In fact, it looks more like a 512MB memory stick. It certainly doesn't look like something this small can support both DVB-T and analogue reception, or that you can use it to listen to the radio. But the fat bandwidth provided by a modern USB 2.0 interface means that the WinTV-HVR 900 can do the analogue/digital part. But don't buy one of these cards expecting it to work in a humble USB 1.1 slot. It'll carve an episode of *EastEnders* into a ghastly,

shuddering photo slideshow if you give it the opportunity.

In terms of specifications, the WinTV-HVR 900 goes head-to-head with Terratec's petite Cinergy Hybrid T USB XS. Neither claim to have anything to do with HDTV, nor do they hide a talent for radio reception, FM or otherwise. They both include an IR remote control, which becomes useless if you plug either device into a rear USB port. And while both the Cinergy Hybrid T USB XS and the

DETAILS

Tuner type	Analogue and digital terrestrial (DVB-T)
Number of tuners	1
Interface	USB 2.0
Video encoding formats	MPEG1, MPEG2
Video capture software	WinTV Scheduler (seven-day EPG), WinTV 2000 (timeshifting)
MCE compatible	No
Connectivity	Coaxial aerial only
Extras	Portable DVB-T antenna, USB extension cable, installation CD



WinTV-HVR 900 come with small antennae, the Hauppauge one is bigger.

What we're saying here is that, when Hauppauge made the WinTV-HVR 900 small, there had to be some tech trade-offs. This is basically a simple plug-and-watch mobile tuner; whatever it can't do for itself, it offloads onto the host PC. So rather than a hardware MPEG2 encoder, video capture is performed via software. Video smoothness, therefore, is determined by how fast the host PC is and, as a desktop solution, it's nowhere near as potent as a dedicated PCI card.

Lacking Media Center compatibility, the WinTV-HVR 900 is never as clever as you hope it will be – on our test laptop at least, watching recorded TV was often as smooth as driving too fast up a residential street that has just had regular speed bumps installed.

73 % **PCF says...** "This card's jerky playback and limited features cost it valuable points."



Pinnacle PCTV 310i

Price £71 Web www.pinnaclesys.com

The PCTV 310i is another half-height, analogue/digital PCI combo card. Yet this one feels less geeky than the other cards in this Supertest. Perhaps it's the PCTV tag in the title? Maybe it's the fact it's got a mainstream presence – you can buy it via Amazon rather than a dedicated IT retailer.

Then again, maybe it's the fact that this Pinnacle card features a comprehensive software application that gives you *Media Center*-style functionality without the cost of buying the OS and the inconvenience of re-installing Windows. Like *Media Center*, Pinnacle's own *MediaCenter* software can handle music playback and photo slideshows, plus there's support for FM radio. Pinnacle is pushing the media hub aspect here as well as the PC TV angle.

Naturally, the 310i performs the usual TV tuner duties – recording TV, timeshifting TV and the playback of either analogue or DVB-T video. Whether it was the fact that seven other tuners had been installed on our test PC or that

DETAILS

Tuner type Analogue and digital terrestrial (DVB-T)

Number of tuners 1

Interface PCI

Video encoding formats MPEG1, MPEG2

Video capture software Pinnacle MediaCenter (timeshifting, seven-day EPG, music and photo browsing)

MCE compatible Yes

Connectivity Coaxial aerial, composite video

Extras IR remote control, audio cable

the card just wasn't up to scratch, the performance wasn't as smooth as the Black Gold or the DabsValue cards. DVB-T playback was prone to the odd jerk, which was more noticeable on lower res channels like Sky Sports News.

Even though the 310i is compatible with Microsoft's *Media Center*, it doesn't support the 'wake up recording' options that would mark it as a serious MCE choice. Instead, this card works best with the suite that's bundled with it. The app is partnered by Pinnacle's *Media Manager* software.

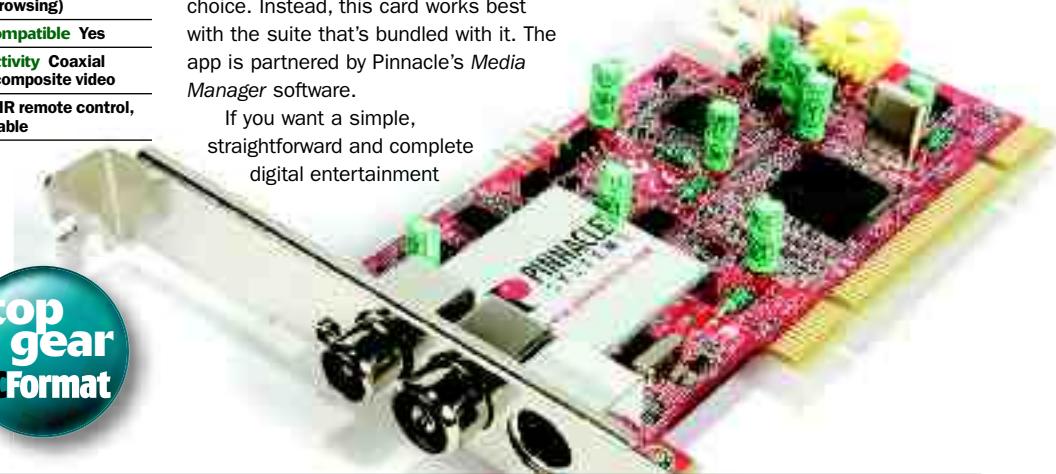
If you want a simple, straightforward and complete digital entertainment

option for your home, then the Pinnacle PCTV 310i just about fits the bill in all respects. But if you're only interested in investing in a TV tuner, there are better options than this.

82% PCF says... "An all-in-one solution that works best with Pinnacle's own software."



top
gear
PCFormat



Leadtek WinFast DTV1000T

Price £72 Web www.leadtek.com

At first glance, it looks like the DTV1000T has two digital tuners. But it actually there's only one. The second connector isn't an RF input, but an RF loop-through connector, enabling you to route an aerial's signal through the Leadtek card and into another device, like a TV. Bandwidth problems mean that we're unlikely to see dual DVB-T tuners on a single PCI card. Several companies are working on PCI Express versions for 2006, though.

Like the DabsValue card, the DTV1000T is stuffed with features that go beyond the call of duty. In addition to encoding DVB-T broadcasts into high-quality MPEG2, this card also

supports analogue inputs and can encode into either MPEG2 or MPEG4. Leadtek boasts that two DTV1000T cards can be used to record multiple channels, so it's a shame it isn't a half-height board, better for SFF PCs.

The installation was painless and the *WinFast* software supports the expected timeshift and PVR functions. A remote control is supplied for couch potato operation but, as Leadtek's software doesn't have a 10-foot *Media*

DETAILS

Tuner type Analogue and digital terrestrial (DVB-T)

Number of tuners 1

Interface PCI

Video encoding formats MPEG1, MPEG2, MPEG4 (analogue only)

Video capture software Leadtek (timeshifting, seven-day EPG, PIP, HDTV ready)

MCE compatible Yes

Connectivity Coaxial aerial, RF loop through, composite video, S-Video

Extras IR remote control, installation CD

Center-style interface, it's hard to see the point. Fortunately, the DTV1000T is compatible with *Media Center* 2005, so you don't need to stick with the default software. It also supports S3/S4 'wake up recording', which means you can flick your PC quickly into hibernation or standby modes.

Compare the picture quality and performance with the other PCI cards and it's hard to tell the difference between them. Digital broadcasts have a pleasing clarity, jazzed up by a multiple channel preview and picture-in-picture options. You can even grab a still shot from your MPEG2 video and save it out as a JPEG or BMP file.

In technical terms, the DTV1000T is an excellent tuner, although it's a full-size PCI card and may not fit into some smaller PC systems, such as Shuttles.

87% PCF says... "Good image quality and features. Shame the card's not half-height, though."





Trust TV-2100

Price £74 Web www.trust.com

This old dear is starting to show its age, especially when you put it alongside the deliciously small WinTV-HVR 900 and the Cinergy Hybrid T USB XS TV tuners we've looked at here. But considering that the HVR 900 and the Cinergy Hybrid have problems in the digital department, there might be hope for the TV-2100 yet.

Or perhaps not. Despite the fact that you can pick the TV-2100 up for around £65 online and it's capable of encoding into MPEG2 from a DVB-T stream, that's about as good as it gets. The big problem with the TV-2100 is the USB 1.1 connection between the external tuner and the PC. It's barely fast enough to cope with the torrent of high-quality digital video sloshing through it and consequently the quality of live or recorded TV is poorer than any other device here.

Again, depending on how good the Freeview signal is, you may be able to get judder-free playback. If you can, the TV-2100 will grab its TV listings info from

DETAILS

Tuner type	Digital terrestrial (DVB-T)
Number of tuners	1
Interface	USB 1.1
Video encoding formats	MPEG1, MPEG2
Video capture software	Trust (timeshifting, EPG)
MCE compatible	No
Connectivity	Coaxial aerial
Extras	Infrared remote control, portable aerial, installation CD

the DVB-T signal and the box is also capable of some basic timeshifting functionality – pausing and rewinding video, simultaneous playback and record, plus resizable video windows (up to 1,024x768).

In its favour, the package includes a slim remote control and a portable aerial. But a lack of *Media Center* support, analogue reception, and any form of S3/S4 'wake up recording' functionality counts against it.

The TV-2100 is an example of what not to buy. TV tuner technology has improved dramatically in the past year and looks set to leap forward again with the introduction of dual tuner PCI Express cards. Ultimately, however,

only the wider availability of Freeview will drive the tuner market forward, and we may have to wait another two years before that becomes a reality.

62% PCF says... "Time to take the TV-2100 out into the desert for a mob-style execution."



Terratec Cinergy XS

Price £93 Web uk.terratec.net

Like the Hauppauge WinTV-HVR 900, Terratec's staggeringly dinky external hybrid is an eye-opener. Its diminutive dimensions award it instant 'gadget' status before you've even got it out of the box and plugged it into a PC. It is, according to Terratec, 'the world's most mobile TV card'. But, as women have fibbed to men throughout the centuries, size isn't everything.

If you've read the review of the WinTV-HVR 900 (if not, why not do so now? We'll can wait...), you'll know that this Cinergy Hybrid stick boasts a similar set of features. Like the Hauppauge tuner, it's capable of receiving either analogue or digital terrestrial broadcasts, encoding them into MPEG2 via software rather than hardware. But there's no FM radio option, no *Media Center* compatibility, not even a slight whiff

of anything HDTV-related and a complete absence of MPEG4 encoding (for analogue data).

Considering how small the Cinergy Hybrid T USB XS is, the lack of a full feature-set is hardly surprising. But because it lacks the grunt of a PCI card, video playback (especially digital) can suffer from judders and jerks, making programmes unwatchable. The degradation of DVB-T video quality will vary depending on Freeview

DETAILS

Tuner type	Analogue and digital terrestrial (DVB-T)
Number of tuners	1
Interface	USB 2.0
Video encoding formats	MPEG1, MPEG2
Video capture software	CyberLink PowerCinema (timeshifting, seven-day EPG)
MCE compatible	No
Connectivity	Coaxial aerial, composite and S-Video via cable
Extras	Infrared remote control, portable aerial, installation CD

signal strength in your local area. Suffice to say that when the Hybrid T is plugged into the same aerial feed as the nine other cards in this test, playback was as smooth as a tray of broken glass.

It's a shame, because we can really see the appeal of these miniature TV tuners. With a good enough aerial, you can receive decent analogue TV reception on the move, but digital will remain flaky until the digital switchover begins in 2008. Based around CyberLink's PowerCinema, the Cinergy Hybrid T USB XS deserves to do better. There have been some positive reviews, undoubtedly by journalists who live within a mile or two of a Freeview transmitter. The reality is this while it's an effective analogue tuner, its digital talents can be hampered by wispy Freeview broadcasts.



71% PCF says... AverMedia's DVB-T USB2.0 has the same functions and performs better."

SPECIFICATIONS AND PERFORMANCE

Compare and contrast, children

£59
Black Gold
DVB-T MCE

89%



£60
Dabs Dabs
Digital TV/PVR

91%



£65
Value AverMedia
AverTV DVB-T

83%

£66
AverMedia
AverTV
ExpressCard

80%



£67
AverMedia
AverTV
Hybrid+FM

91%



NUMBER OF TUNERS	1	1	1	1	1
TUNER INTERFACE	PCI	PCI	USB 2.0	ExpressCard/54	CardBus/PC Card
CONNECTIVITY	Coaxial aerial, S-Video	Coaxial aerial, composite, S-Video	Coaxial aerial only	Coaxial aerial, composite and S-Video via cable	Coaxial aerial, composite and S-Video via cable
DVB-T	Yes	Yes	Yes	No	Yes
ANALOGUE	No	Yes	No	Yes	Yes
HDTV	No	Yes	Yes	No	Yes
FM RADIO	No	No	No	No	Yes
REMOTE CONTROL	No	Yes	Yes	Yes	Yes
PORTABLE ANTENNA	No	No	Yes	Yes	Yes
IR Emitter	No	No	No	No	No
MPEG1	Yes	Yes	Yes	Yes	Yes
MPEG2	Yes	Yes	Yes	Yes	Yes
MPEG4	No	No	No	Yes	Yes (analogue only)
WAKE-UP FROM S3/S4	Yes	Yes	No	No	Yes
WINDOWS MCE COMPATIBLE	Yes	Yes	Yes	No	Yes
CAPTURE SOFTWARE	None (requires Media Center 2005)	ComproDTV	AverTV	AverTV	AverTV
PVR FUNCTIONS	None (requires Media Center 2005)	Timeshifting, EPG	Timeshifting, EPG, PIP	Timeshifting, EPG, PIP	Timeshifting, EPG, PIP
EXTRAS	None	Installation CD	USB cable, installation CD	Installation CD	FM antenna, installation CD

PCF Verdict

Which tuner got the best reception from PCFormat?

The results are in, and it's so difficult to separate the mobile options from the desktop cards that we've decided to give a Gold Award to one of each type.

One thing that ties the majority of today's cards together is their support for analogue and digital (DVB-T) television. While Freeview reception

is still flaky in some areas, analogue terrestrial signals continue to provide a service. The UK has enjoyed some form of analogue broadcasting since 1936 so the 'digital switchover' is the biggest change to TV since the advent of colour.

Hybrid cards, like AverMedia's Hybrid+FM CardBus represent the best that current

technology has to offer, giving consumers the opportunity to buy a card that can cope with the analogue signals that blanket the country today as well as the new digital signals which will replace them. We were impressed with the Hybrid+FM's comprehensive

NEXT MONTH
10 TOP GAMING
MOTHERBOARDS
GO THROUGH
THE PCFORMAT
WRINGER

£68**Hauppauge
WinTV-HVR 900****£71****Pinnacle PCTV
310i****£72****Leadtek WinFast Trust TV-2100
DTV1000T****£74****Leadtek WinFast Trust TV-2100****£93****Terratec Cinergy
Hybrid XS**

73%

82%



87%



62%

71%



1	1	1	1	1	NUMBER OF TUNERS
USB 2.0	PCI	PCI	USB 1.1	USB 2.0	TUNER INTERFACE
Coaxial aerial only	Coaxial aerial, composite video	Coaxial aerial, RF loop through, composite video, S-Video	Coaxial aerial only	Coaxial aerial, composite and S-Video via cable	CONNECTIVITY
Yes	Yes	Yes	Yes	Yes	DVB-T
Yes	Yes	Yes	No	Yes	ANALOGUE
No	No	Yes	No	No	HDTV
No	No	No	No	No	FM RADIO
No	Yes	Yes	Yes	Yes	REMOTE CONTROL
Yes	No	No	Yes	Yes	PORTABLE ANTENNA
No	No	No	No	No	IR Emitter
Yes	Yes	Yes	Yes	Yes	MPEG1
Yes	Yes	Yes	Yes	Yes	MPEG2
No	No	Yes (analogue only)	No	No	MPEG4
No	No	Yes	No	No	WAKE-UP FROM S3/S4
No	Yes	Yes	No	No	WINDOWS MCE COMPATIBLE
WinTV Scheduler, WinTV 2000	Pinnacle MediaCenter	Leadtek	Trust	CyberLink PowerCinema	CAPTURE SOFTWARE
Timeshifting, EPG	Timeshifting, EPG, music and photo browsing	Timeshifting, EPG, PIP	Timeshifting, EPG	Timeshifting, EPG	PVR FUNCTIONS
USB extension cable, installation CD	Audio cable	Installation CD	Installation CD	Installation CD	EXTRAS

all-round feature-set and its consistently reliability and performance, both with analogue and digital TV. It seems to be a far better, neater solution than the USB 2.0 devices, which couldn't match the clarity of DVB-T playback that the AverMedia card produced.

On the desktop side, the battle for top spot was considerably closer, but the superb Black Gold card was just pipped by the Dabs DabsValue Digital TV/PVR Card, a Compro VideoMate DVB-T300 in disguise. While the Black Gold card does one job and does it well, the VideoMate provides a more complete all-round package. It can either be used with the

ComproDTV software supplied or as part of a ShowShifter- or Media Center 2005-based PVR system. It's this innate flexibility that caught our eye.

If we've learned any lessons from the biggest is probably this: check that you can receive a good Freeview signal before taking the plunge and investing in a DVB-T card. Check out www.freeview.co.uk to see if you can receive digital broadcasts, or check www.ukfree.tv/txlist.php to work out where your nearest Freeview transmitter is. **PCF**



Dabs' and AverMedia's cards both performed well in our tests.



Al Bickham
GOES WORLDWIDE

Live from a hotel room deep in the heart of Sin City
All things being equal, this year's Consumer Electronics Show (CES), held in Las Vegas, was mildly disappointing. There were few new physical technologies on show, despite the fact that every manufacturer and his dog had Blu-ray and HD-DVD players proudly displayed. Intel was screaming Viiv and Yonah at the top of its lungs, Microsoft's PR department was going hell for leather, plugging Windows Media Center Edition like never before; even AMD has jumped on the digital media bandwagon with the announcement of AMD 64 Live!

The digital home is very much top of the worldwide computing agenda. However, today's new technologies are so well-broadcast in advance, there's nothing here to really surprise; TVs are getting bigger, resolutions are getting sharper and HD content is looking very lovely.

As a broad overview, it's safe to say that traditional PC technology providers are still striving to lay claim to your living room. This should come as no surprise to PCFormat readers, though, and this show very much reflects a year of evolution rather than revolution.

PCFormat How to buy kit

ESSENTIAL BUYING ADVICE

Welcome to the PCFormat Buyers' Guide. Over the next few pages, we'll arm you with the information you need to know when you're shopping for PC parts: where to go, what to buy and, crucially, the concepts involved in each key component. Knowledge is power – especially when you're armed with a wallet full of hard-earned notes and you want the best on offer.

These are exciting times indeed if you're looking to upgrade your processor, the beating heart of your PC. With Intel furiously rebranding their entire range and AMD just releasing the power-crazed beast that is the FX-60 you're spoilt for choice. If you're on a budget then entry level dual core CPUs are still surprisingly cheap. The Pentium D 820 can be found for around £170 and for the pure strain gamers out there then AMD's Athlon 64 X2 3800+ is kicking around for only an extra 50 notes.

For a complete reviews database visit www.pcformat.co.uk

Jargon Buster

Making sense of the noise

Pipeline panic

GPUs have different numbers of pixel pipelines. Generally speaking, the more the better; however, that's changing as ATI is now using fewer but broader pipes.

Latently obvious

Memory access speed is measured in CAS latency, (Column Address Strobe) or CL – the lower the better. Really fast RAM is CL2 so, when buying, get the fastest you can. Note that DDR still features lower CL than DDR2.

Cache machine

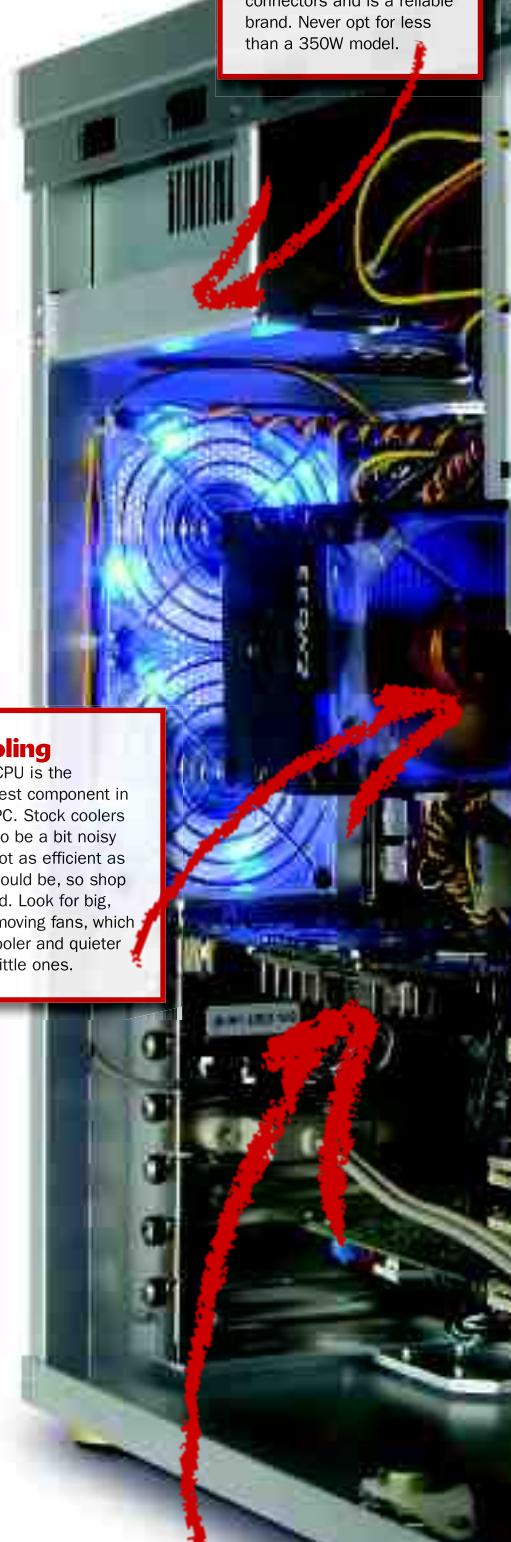
The L2 cache of a CPU is a small block of superfast RAM dedicated to the CPU. Here, the CPU stores recent calculations so it doesn't have to keep doing them. Forget processor speeds: L2 cache size is the major difference between Pentium and Celeron performance.

Panel beater

The millisecond rating of an LCD monitor isn't the only mark of quality. Check the brightness of the panel too. You can game quite happily on a 12ms monitor.

Power supply

Every component needs electricity, and the PSU is where it comes from. When shopping for a new one, ensure it has the right connectors and is a reliable brand. Never opt for less than a 350W model.



Cooling

Your CPU is the toastiest component in your PC. Stock coolers tend to be a bit noisy and not as efficient as they could be, so shop around. Look for big, slow-moving fans, which are cooler and quieter than little ones.

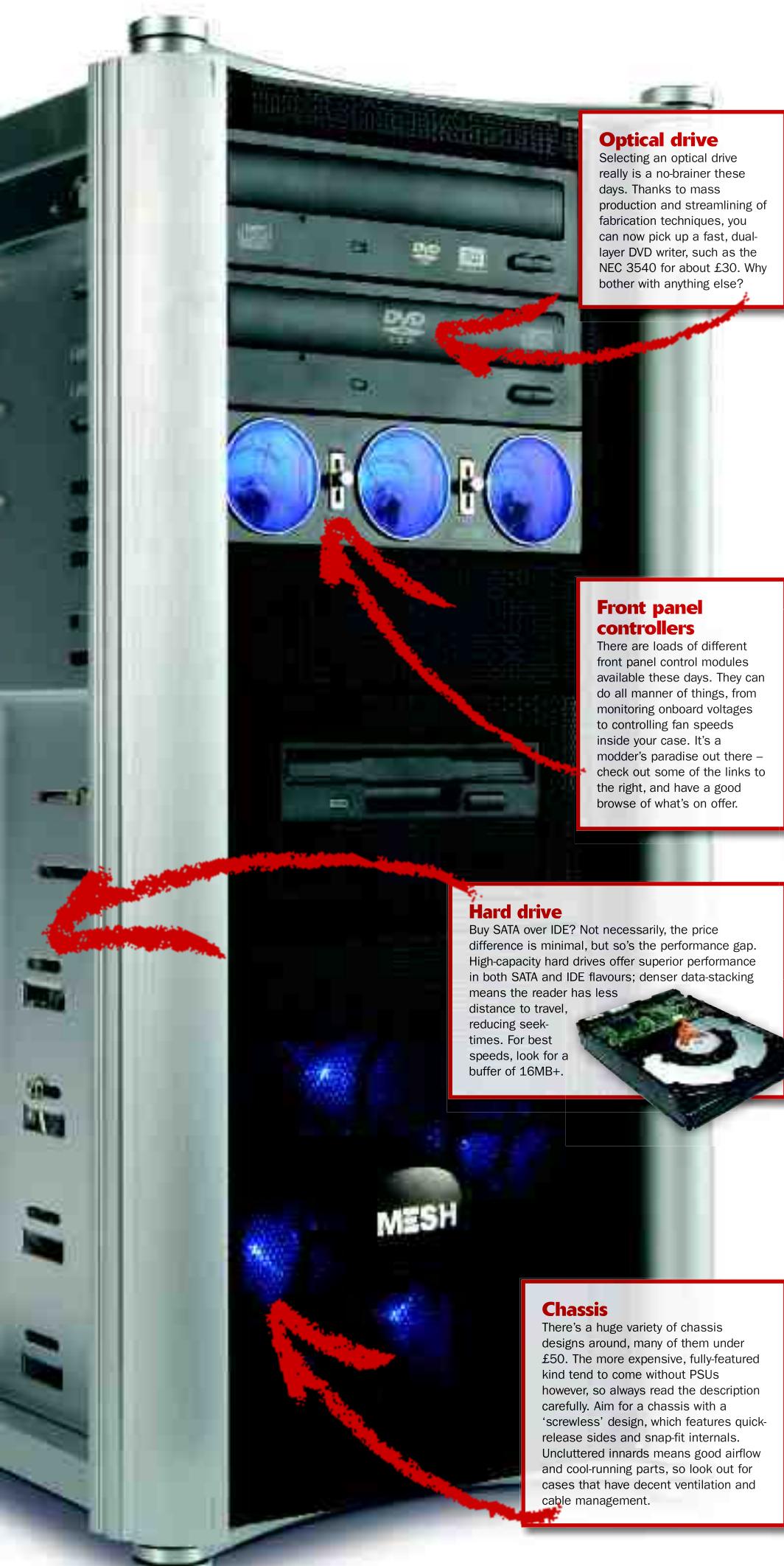
Graphics card

Does your mobo support AGP, or the newer PCI Express standard? Ensure you've got the right card for the slot, and check overleaf for the best cards in every price category.

Turn to page 144



How to buy...



Optical drive

Selecting an optical drive really is a no-brainer these days. Thanks to mass production and streamlining of fabrication techniques, you can now pick up a fast, dual-layer DVD writer, such as the NEC 3540 for about £30. Why bother with anything else?

Front panel controllers

There are loads of different front panel control modules available these days. They can do all manner of things, from monitoring onboard voltages to controlling fan speeds inside your case. It's a modder's paradise out there – check out some of the links on the right, and have a good browse of what's on offer.

Hard drive

Buy SATA over IDE? Not necessarily, the price difference is minimal, but so's the performance gap. High-capacity hard drives offer superior performance in both SATA and IDE flavours; denser data-stacking means the reader has less distance to travel, reducing seek-times. For best speeds, look for a buffer of 16MB+.



Chassis

There's a huge variety of chassis designs around, many of them under £50. The more expensive, fully-featured kind tend to come without PSUs however, so always read the description carefully. Aim for a chassis with a 'screwless' design, which features quick-release sides and snap-fit internals. Uncluttered innards means good airflow and cool-running parts, so look out for cases that have decent ventilation and cable management.

Best Buy

Point your purse at this...

Elite²

£899

Full dual core systems are flooding into the market, and here's a beauty from MESH Computers. It has Intel's doubled-up CPU, as well as an SLI ready motherboard just waiting for you to pop in another 6800XT for some extra grunt. Wait a month or so and you'll probably be able to pick up the extra card for less than £100. Together with the 1GB of DDR 400, a decently sized 200GB HD and the 19" TFT display, you've got a solid little system.

Under the hood

CPU Pentium D 820 2.8GHz

Memory 1GB DDR 400

Video Card NVIDIA 6800XT 256MB

HDD 200GB SATA

Optical 16X Dual Layer DVD RW

Monitor 19" Viewsonic VX912

Speakers 7.1 desktop

Input Keyboard/optical mouse



Recommended

Top PC and component stores

www.scan.co.uk

www.pcnextday.co.uk

www.savastore.co.m

www.vadim.co.uk

www.nortekonline.co.uk

www.yoyotech.co.uk

READ ON...

Buyers' guide contents

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Turn
for the
rest

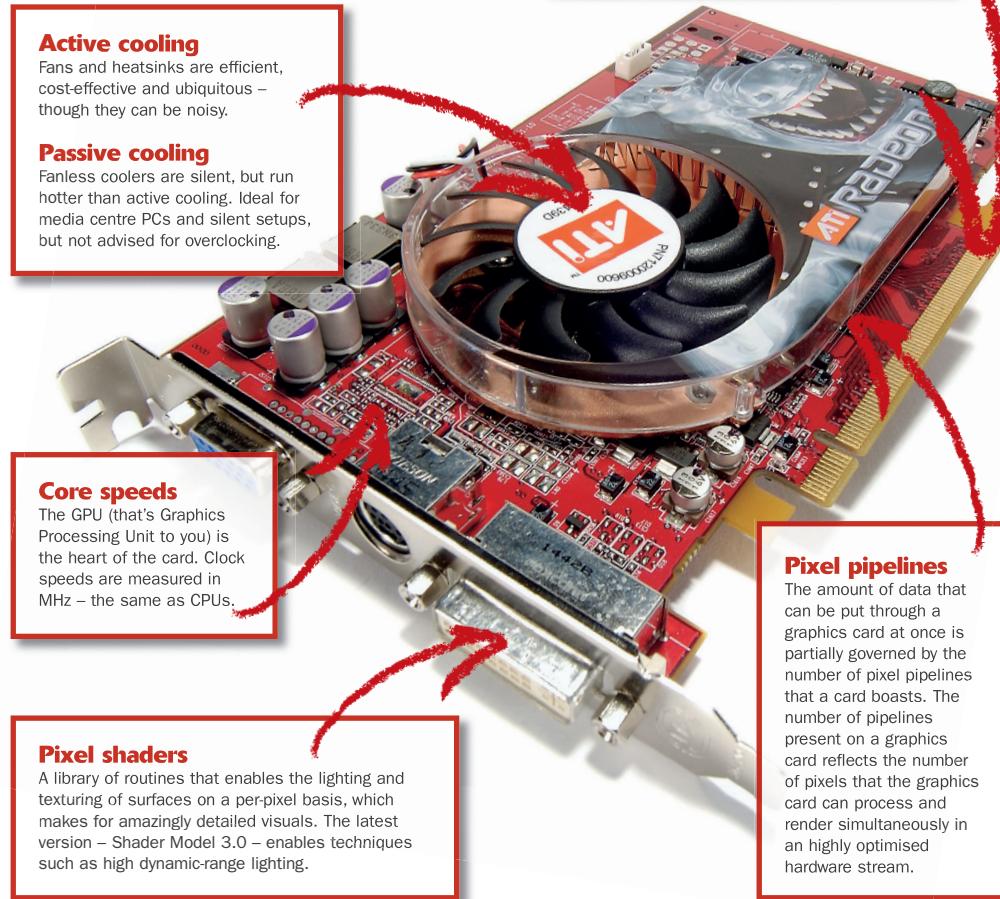
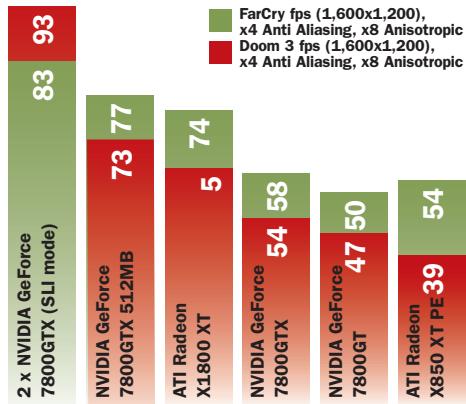
Graphics

Courting media attention and costing the Earth, the 3D card is the supermodel of components

Ever the limelight seeker, the graphics card is an essential part of any gaming rig. It's also a shopper's minefield. High-end cards are powerful yet shockingly expensive, but frequently don't warrant the outlay; today's whizzy budget cards, such as ATI's X800GTO and NVIDIA's 6600GT, are great performers for the price, and make more sense financially. Also worth noting, NVIDIA has lately revised its 7800 series with a new top-end card to compete with ATI's X1800XT. The top-end 7800GTX now has 512MB GDDR3 RAM, running at 1.6GHz.

Benchmarks

How the top cards stack up...



PCFormat FAVOURITES... Graphics cards

The best cards that money can buy, in all the categories that count

» Money no object



TOP SPEC

7800GTX 512 £~500

The high-end version of a high-end card, with massive clock and memory speeds. Just ahead of the X1800XT on performance, which makes it a winner.

NVIDIA www.nvidia.com

WE ALSO LIKE

X1800XT £357

Geforce 7800GT £205

PCF 179 90%



BEST BUY

Forsa 7800GTX £300

As good as any other GTX on the shelves, but the minimal bundle knocks this awesome card down to a mere £300 – £60 cheaper than other GTXs.

Nortek www.nortekonline.co.uk

WE ALSO LIKE

GeForce 6800GS £170

Radeon X1800XL £234

PCF 183 89%

» Sub £200



TOP SPEC

Sapphire X800 GTO2 £120

Featuring the core from the X850XT, this new mid-range card features awesome poke, and a price tag that won't make Richard Branson blush.

Sapphire www.sapphiretech.com

WE ALSO LIKE

NVIDIA 6800GS £169

Leadtek Winfast 6800 £120



BEST BUY

Radeon X800GT £106

Made by ATI partner Powercolor, this budget card is a bargain: an eight pixel-pipe version of the X800, with 256MB GDDR3. Plus, it overclocks well.

Powercolor www.power-color.com

WE ALSO LIKE

HIS X800GT IceQ 2 Turbo £130

Radeon X800 GTO £135



TOP SPEC

Gigabyte 6600GT £100

It's incredible that such a cracking card can cost so little. It may struggle with high-end settings, but the 6600 fires on all cylinders at 1,024x768.

Gigabyte www.giga-byte.nl

WE ALSO LIKE

Abit RX700 LE Guru £92

Powercolor Radeon X600XT £67



BEST BUY

Sapphire X700 £72

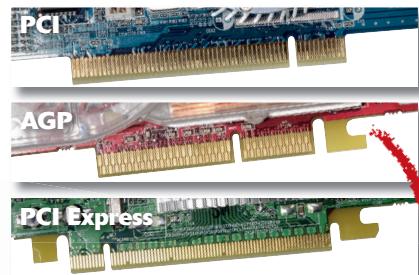
With performance approaching that of NVIDIA's 6600 chipset, the Radeon X700 is a great budget choice, and Sapphire's offering is a bargain.

Sapphire www.sapphiretech.com

WE ALSO LIKE

Forza 6600 £75

XFX 6600 LE £65



Processors

The core technology at the heart of every PC. What to look for, how it works, and which to buy...

Your PC has a nervous system, consisting of three key components: the motherboard, the CPU (central processor unit) and the RAM (random access memory). Together, they dictate the basic performance of your PC.

General consensus – and raw figures – tell us that AMD Athlon 64 and Athlon FX-based systems are better for gaming than comparable Intel Pentium-based systems, while the latter tend to whip AMD chips for productivity and multimedia encoding or decoding. This is partly due to the memory controller setup (see right). Generally, AMD chips are clocked lower and are more efficient, while Pentium chips win on outright speed, and are therefore better for processor-intensive tasks.

Memory controllers

Athlon 64 CPUs have the memory controller on the CPU, whereas Pentiums have it on the northbridge of the motherboard. This lack of travel means that Athlon 64 chips use memory far more efficiently: DDR400 in an Athlon system works as well as DDR2 in an Intel system.

FSB

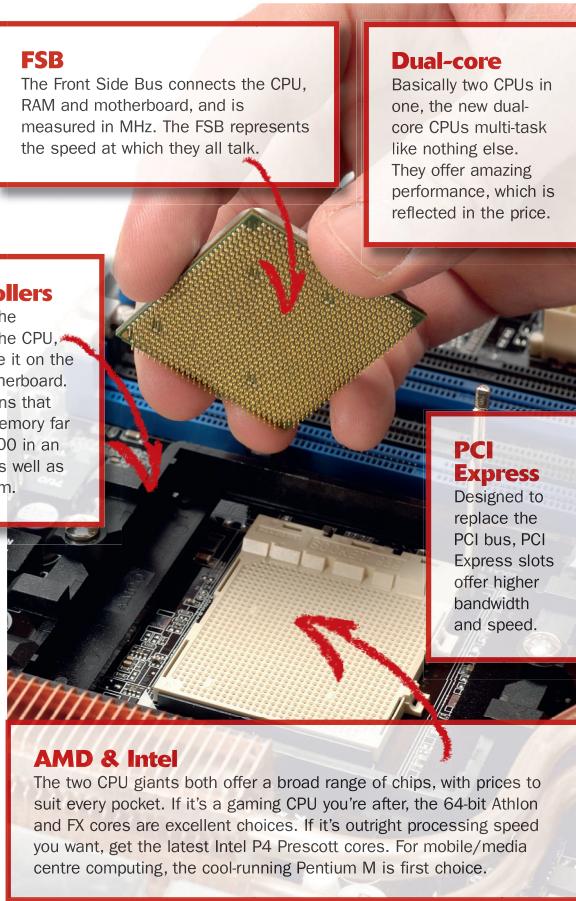
The Front Side Bus connects the CPU, RAM and motherboard, and is measured in MHz. The FSB represents the speed at which they all talk.

Dual-core

Basically two CPUs in one, the new dual-core CPUs multi-task like nothing else. They offer amazing performance, which is reflected in the price.

ADVICE!

When upgrading your CPU and mobo, make sure you match the CPU with the socket on the board. Socket 754 and 939 for Athlon 64 and FX chips; Socket 775 for newer Pentium 4s.



PCFormat FAVOURITES... CPUs and Mobos

Essential components for your computing pleasure

» CPUs



TOP SPEC

Athlon 64 X2 4800+ £553 > **PCF179 87%**

It comprises two 90nm Athlon 64 cores running at 2.4GHz each, when just a single one would be nice. The X2 dines well on any game, gobbling high-def encoding with glee.

AMD > www.amd.com

WE ALSO LIKE

Athlon 64 FX-60 £709 > **PCF184 84%**

Athlon 64 3800 £195 > **PCF180 89%**



BEST VALUE

Athlon 64 3200+ £112 > **PCF179 79%**

2GHz may suggest an entry-level chip, but hand on heart, the 90nm 3200+ provides a wad of grunt designed to make gamers grin. And at £130, it's a shameless bargain to boot.

AMD > www.amd.com

WE ALSO LIKE

Intel Pentium D 820 £175 > **PCF180 89%**

Intel Pentium 4 650 £195 > **PCF180 74%**

» Motherboards



TOP SPEC

Abit Fatal1ty AN8-SLI £121 > **PCF177 84%**

Aimed squarely at performance-demanding gamers, this Socket 939, NFORCE 4 chipset board comes with an overclocking front-panel for your case. Extras include a 7.1 soundcard.

ABIT > www.abit.com

WE ALSO LIKE

Sapphire PURE Innovation £124 > **PCF181 79%**

Gigabyte GA-K8N Ultra 9 £82 > **PCF176 86%**



BEST VALUE

Asus A8V Deluxe Wi-Fi £77 > **PCF174 79%**

There are cheaper boards, granted, but this is today's performance at a reasonable price. A tasty bundled extra is the 802.11g wireless card and omni-directional receiver.

Gigabyte > www.asus.com

WE ALSO LIKE

Foxconn 6150K8MA-8EKRS £62 > **PCF181 86%**

ECS 661GX £32



GigaByte 512Mb ATI Radeon X800XL PCI-E Graphics Card
SAVE 12%

Mfr Code: GV-RX80L512V
Stock Code: 02144

£284.94
INC VAT

XFX 7800GTX Ultra Extreme Edition 256MB PCI-E Graphics Card
SAVE 24%

Mfr Code: PVT70FUDDR
Stock Code: 02486

£391.36
INC VAT

NZXT Lexa Classic Series case, Screwless with Window
SAVE 10%

Mfr Code: Lexa
Stock Code: 02217

£89.99
INC VAT

Coolermaster Stacker STC-001 Black Case
SAVE 23%

Mfr Code: STC-T01
Stock Code: 009860

£144.76
INC VAT

Tagan Powersupply 580W 120mm Fan
SAVE 20%

Mfr Code: TG580-U15
Stock Code: 01068

£91.05
INC VAT

Seasonic S12-500 PSU active PFC silent 12cm fan
SAVE 8%

Mfr Code: S12-500
Stock Code: 02017

£87.52
INC VAT

Silverstone PCI-E Riser RC02 for LC02 and LC04
SAVE 24%

Mfr Code: RC02
Stock Code: 01025

£21.15
INC VAT

Lacie Mobile Hard Drive 80 GB USB 2.0 / FireWire 400
SAVE 23%

Mfr Code: 300765
Stock Code: 01019

£115.03
INC VAT

Gigabyte GA-K8NS Motherboard Socket 754
Featured Product

Mfr Code: GA-K8NS
Stock Code: 02350

£43.35
INC VAT

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How to buy...

Monitors

What's the point in a £350 3D card if your screen's a munter? Go TFT – prices are lower, and quality higher than ever

The monitor is one of the single most important components of your PC setup. It's going to be displaying visuals for you for the next few years; that's why we always say secure the highest budget you can and shop very pickily within it. And don't be swayed simply by the response-time (ms) rating – if the fastest panel in the world has a low level of brightness and washed-out colour, it's about as useful as shoes on a snake. Wherever possible, try before you buy and check the panel against others in the same price-range. When you've found the one you like, shop around for the biggest bargain.

Look out for...

Crucial factors to bear in mind

Native resolution

Run an LCD at less than its native resolution, and things look mucky. Ideally, you want a resolution of 1,280x1,024 or better, backed by a 3D card that can broadcast at that size.

Response times

High response times mean reduced ghosting, and a ghost-free TFT is the gamer's holy grail. Look for panels with lower than 12ms ratings. Don't forget to check sharpness, text legibility and brightness though.

Brightness

A pin-sharp image is nothing without high-quality lamps in the back of the panel, zinging the visuals to life. A dull panel makes for drab graphics.

Colour fidelity

When trying out a monitor, take the colour reproduction into account, and check the panel against its price-bracket peers. If it's not putting out warm, vibrant colours, then move along: nothing to see here. This is where in-store beats online shopping.



Size is everything

The bare minimum size for decent gaming is 19-inch, in our opinion, and if you budget £250-£350, you can guarantee a gorgeous screen that you'll be pleased to use for years. And if you buy one that's been on the market for the last six to 12 months, you're raising the odds of bagging a bargain still further.

Font of wisdom

Some TFT monitors, usually those of the 'cheap and cheerless' variety, suffer from a coarse pixel pitch. This results in poor font rendering, which becomes painfully apparent while word processing or browsing the Internet, and can lead to a dose of eye-strain with extended use. Always check our reviews before splashing out, and try before you buy.

ADVICE!

Any port in a storm? Wrong answer. DVI ports beat VGA ports with an effortless backhanded slap, so if you've DVI-out on your 3D card, make sure you get a monitor with DVI-in.

PCFormat FAVOURITES... Flat-panel monitors

From misers to millionaires, panels to suit every pocket

>> 17-inch monitors



TOP SPEC

Sony SDM-HS75P £246 >> PCF175 89%

Using Sony's XBlack screen technology, the HS75P is a 17-inchper excellence. It features a startlingly bright display with a decent response time and crystal-clear images – as well it should, for the £300 asking price.

Sony >> www.sonystyle.com

WE ALSO LIKE

Samsung Syncmaster 730MP £299 >> PCF177 78%

AG Neovo M17 £170



BEST VALUE

Digimate L1715 £140 >> PCF177 79%

Not a work of design that Philip Starck would gladly put his name to, but this Digimate monitor does the job on a budget, and it does it rather well. With a native resolution of 1,280x1,024 and being a pretty bright panel, it's great value.

Digimate >> www.digimate.com.uk

WE ALSO LIKE

Hyundai Imagequest B70A £155

Iiyama E437S-S £177

>> 19-inch and over



TOP SPEC

Dell 2405 FPW £655 >> PCF176 95%

Simply astounding. That's the only way to describe Dell's 24-inch monster. It boasts incredible performance in all areas, and a panel this big has to be seen to be believed. Incredibly, it's also around a third cheaper than other monitors its size.

Dell >> www.dell.co.uk

WE ALSO LIKE

BenQ FP91V+ £269 >> PCF177 87%

Viewsonic VX922 2ms £338 >> PCF183 82%



BEST VALUE

AG Neovo M-19 £217 >> PCF177 88%

Love or hate the design, the AG Neovo M-19 is bright, fast, and exhibits a subtle and tight level of image-control pretty much unmatched by its peers. It even rivals the Dell 2405 FPW for colour accuracy. For the price, it's a great performer.

AG Neovo >> www.neovouk.com

WE ALSO LIKE

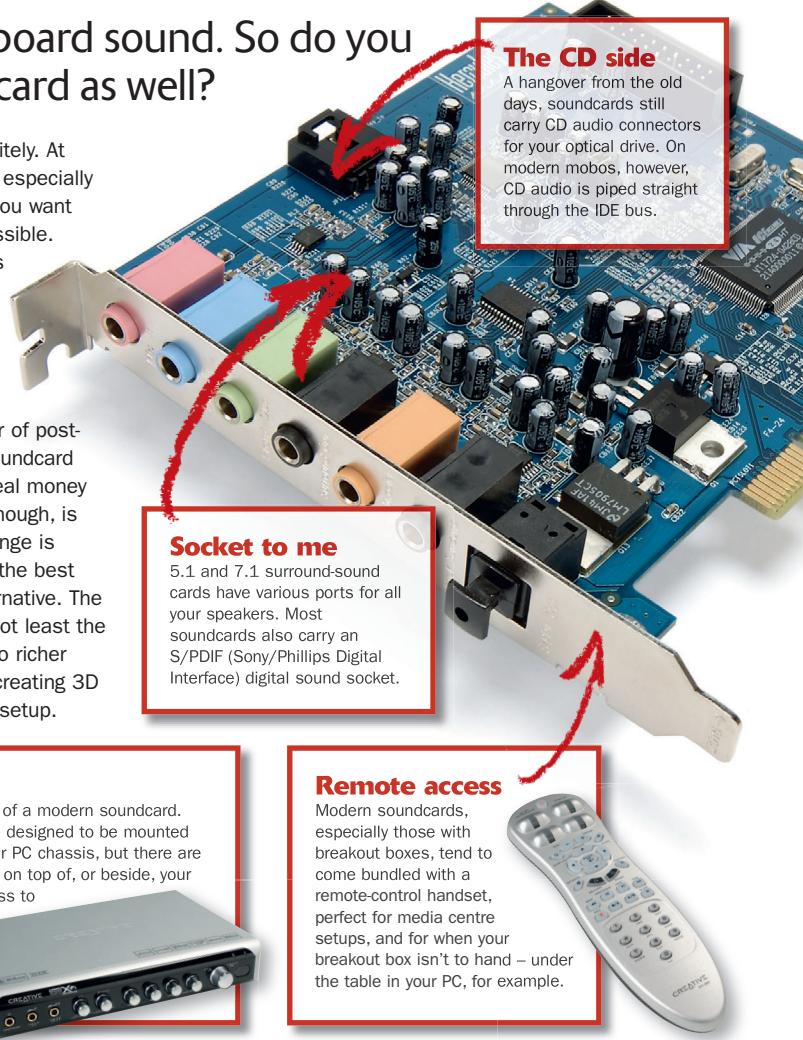
AG-Neovo F-419 £175

Hyundai Imagequest L91A £216

Soundcards

Every mobo has onboard sound. So do you really need a soundcard as well?

The simple answer is yes, definitely. At least if you value your ears, and especially if it's for a media centre PC, or you want the most immersive in-game audio possible. Onboard sound chips (made by various companies such as Realtek and Creative) may offer 5.1 and even 7.1 setups directly from your motherboard, but this technology tends to be several generations out of date and simply can't offer the number of post-processing effects that a dedicated soundcard boasts. The only company ploughing real money into soundcard research these days, though, is Creative, whose new X-Fi soundcard range is simply the bee's knees. If you're after the best sound possible, there's simply no alternative. The cards feature some amazing effects, not least the Crystallise function, which makes audio richer and sharper. X-Fi is also very good at creating 3D sound in a two-speaker or headphone setup.



Box of tricks

The breakout box is the physical 'front end' of a modern soundcard. Some, such as the X-Fi Fatal1ty version, are designed to be mounted into a free 5.25-inch optical drive bay in your PC chassis, but there are others, like the one below, which happily sit on top of, or beside, your PC as standalone units. They give you access to controls including volume, balance, and tone. Don't choose a box over key features like Low SNR, 96KHz sampling and 24-bit DACs, though.



PCFormat FAVOURITES... Sound hardware

Massage your inner ear with these tip-top items

» Sound Cards



TOP SPEC

X-Fi Elite Pro £220 > **PCF179 90%**

Creative's new flagship sound card line comes in four flavours with different price-points, but this is the all-singing version, complete with PCI card, breakout box and IR remote.

Creative > www.creative.com

WE ALSO LIKE

X-Fi Fatal1ty FPS £150 > **PCF182 90%**

Terratec Aureon 7.1 Universe £113



BEST VALUE

X-Fi Extreme Music £85 > **PCF179 82%**

Most suited to media centres rather than gamers, as it doesn't carry XRAM like its pricier brothers. The budget X-Fi card still offers crystal sound with great effects.

Creative > www.creative.com

WE ALSO LIKE

Terratec Aureon 7.1 PCI £38

Hercules Fortissimo 7.1 £28 > **PCF182 82%**

» Speakers



TOP SPEC

Gigaworks S750 £245 > **PCF157 88%**

PC audio champion Creative has come up trumps with the 5.1 S750, which brings crystal-clear sound at life-changing wattages. Look out for the new set in next month's PCF.

Creative > www.creative.com

WE ALSO LIKE

Genius SW-5.1 Home Theatre £85 > **PCF181 82%**

Creative i-Trigue 5600 £115



BEST VALUE

Logitech Z-3 £44 > **PCFPCF173 91%**

A simple and stylish 2.1 setup which shatters the myth that cheap isn't cheerful. Crisp tones, resonant bass, glorious reproduction... and it looks beautiful, to boot.

Logitech > www.logitech.co.uk

WE ALSO LIKE

Nortek Soundream 5.1 £33

Altec Lansing 151i £29

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TECH.co.uk
House of technology

Corsair XMS3200 2GB
2x1024MB DDR Memory

SAVE 10%
Mft Code: TWINX2048-3200C2PT
Stock Code: 02386

£193.86
INC VAT

Corsair Value Select
512MB Memory

SAVE 5%
Mft Code: VS512MB533D2
Stock Code: 009224

£28.20
INC VAT

Asus A8N32-SLI Deluxe
Sock939 PCI-E SATA
Motherboard

SAVE 15%
Mft Code: A8N32 SLI Deluxe
Stock Code: 02218

£143.46
INC VAT

GigaByte 8N SLI Royal
Socket 775 PCI-E
Motherboard

SAVE 25%
Mft Code: GA-8N SLI Royal
Stock Code: 02156

£147.99
INC VAT

AMD Athlon 64 X2
CPU Dual-Core 4200+
Socket 939

SAVE 23%
Mft Code: ADA4200BVBOX
Stock Code: 009916

£286.02
INC VAT

AMD Athlon 64 4000+
San Diego 90nm Skt
939 CPU

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Printers

Getting ink onto paper without making a mess has never been so technical. Now for the science...

For general-purpose printing, a four-ink system usually provides the greatest balance between high-speed and printing quality, with pigment-based inks for rich, solid blacks. It's impossible to recreate the real-world colours of photos using a four-ink process, so most photo inkjet printers use six or more inks to broaden the palette. These models still print general purpose documents, but tend to be slow and only manage greyish blacks.

For the ultimate in printing versatility, most of HP and Lexmark's ranges can switch between four and six-ink modes by swapping the black cartridge for a photo cartridge. Another versatile range includes Canon's five-ink models, like the i865, iP4000 and the new iP4200 and iP5200 printers. These use both pigment-based and dye-based black inks in their lineup, along with cyan, magenta and yellow dye-based inks.

Scanners

Most flatbed scanners use a conventional light-source consisting of a CCF (Cold Cathode Fluorescent) lamp, in conjunction with the same kind of CCD imaging sensor found in digital cameras. The alternative, used in some Canon models as well as the scanners in most MFD (or all-in-one multi-function) printers, is an LED light source as part of a CIS (Contact Imaging Sensor) system. This requires no warm-up time, and standalone CIS scanners can take all the power they need direct from the host PC's USB port, which does away the need for an extra power cable hanging over the back of your already cluttered desk.

Paper Guide

This A3+ photo printer can utilise variable paper widths. To reduce tracking errors, set the guide to the correct position for your paper width.

Output Tray

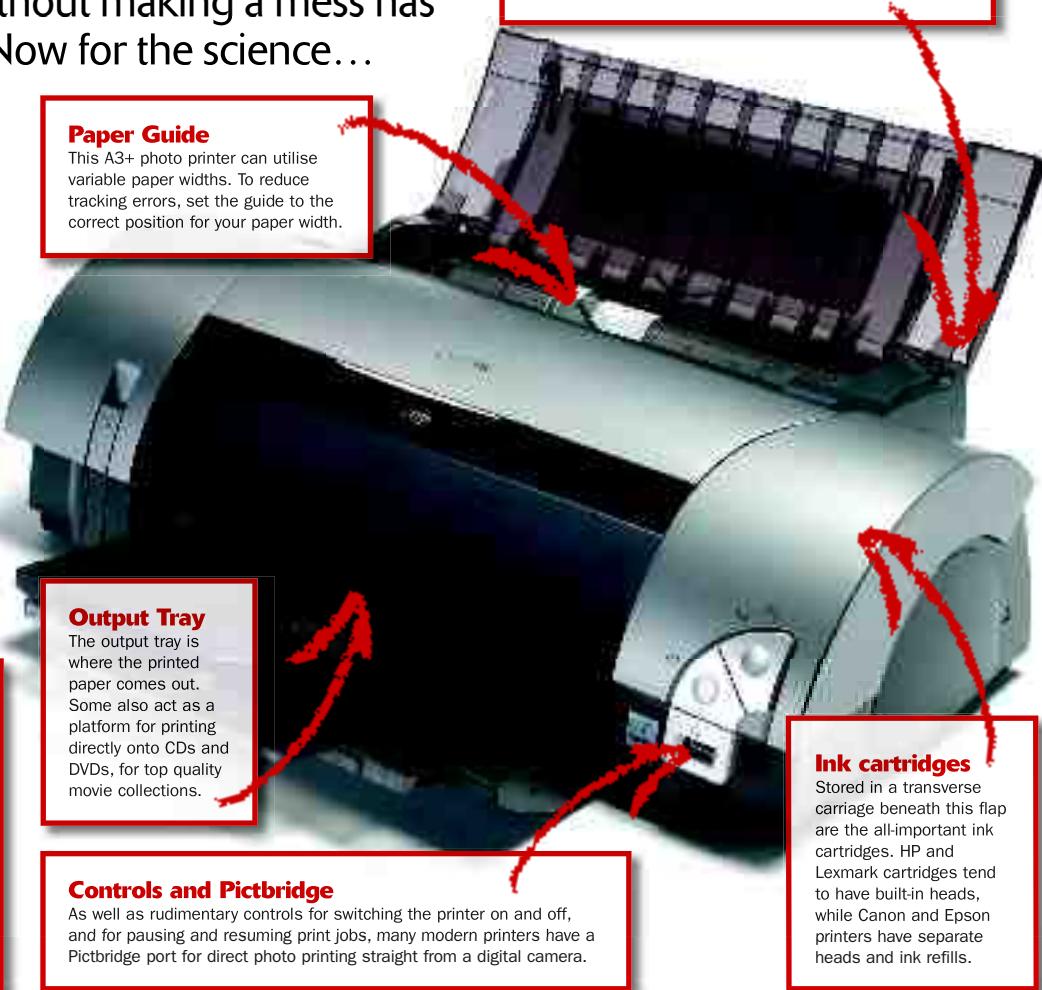
The output tray is where the printed paper comes out. Some also act as a platform for printing directly onto CDs and DVDs, for top quality movie collections.

Controls and Pictbridge

As well as rudimentary controls for switching the printer on and off, and for pausing and resuming print jobs, many modern printers have a Pictbridge port for direct photo printing straight from a digital camera.

Input Tray

Like most inkjet printers, this one has a single vertical paper input at the rear, which can hold up to 150 sheets of plain paper. Some of the latest models have dual paper trays, enabling you to load plain paper into one tray and a reserve amount into the other tray for specialist photo paper. Handy, as it stops you needing to swap it around.



PCFormat FAVOURITES... Printers and scanners

Why go to an expensive photo developer when you can do it all at home?

» Photo Printers



TOP SPEC

Canon i9950 £379 » PCF178 93%

The daddy of all photo printers, the i9950, stinks of quality. Awesome image quality, reasonable ink costs and it even has a Pictbridge port.

[Canon](#) » www.canon.com

WE ALSO LIKE

Canon Pixma IP8500D £209 » PCF178 88%

Epson Stylus R1800 £320 » PCF178 86%



BEST BUY

Canon iP6000D £180 » PCF178 95%

This budget model in the Canon Pixma range offers tremendous value for money. With quality this high and running costs this low, it's a winner.

[Canon](#) » www.canon.com

WE ALSO LIKE

HP Photosmart 8450 £155 » PCF178 78%

Epson Photosmart 8150 £93 » PCF178 75%

» All in ones



TOP SPEC

PIXMA MP500 £169 » PCF184 95%

Incorporating a unique 5-ink system that uses dye and pigment-based black, the MP500 offers fast general printing and rich contrast with photos.

[Canon](#) » www.canon.co.uk

WE ALSO LIKE

HP PSC 2355 £124 » PCF184 88%

Epson stylus CX6600 £70



BEST BUY

HP PSC 1510 £69

Superb print quality and speed for such a low price point. They come cheaper, but you'll start compromising on quality and effectiveness if you do.

www.hp.com

WE ALSO LIKE

Lexmark P4350 £69

HP PSC 2355 £124

» Scanners



TOP SPEC

Epson 3170 £69 » PCF176 95%

A beast of a machine, the 3170 does everything to justify its purchase, with amazing colour-rendition, consistent quality and plenty of options.

[Epson](#) » www.epson.co.uk

WE ALSO LIKE

Canon LiDE 500F £93 » PCF176 80%

HP Scanjet 4670 £59 » PCF176 70%



BEST BUY

Epson 2480 £70 » PCF176 92%

Dominating both the high and low ends of the scanner market, Epson clearly knows its stuff. For the money, you can't buy better than the 2480.

[Epson](#) » www.epson.co.uk

WE ALSO LIKE

Canon Canoscan 4200F £62 » PCF176 85%

HP Scanjet 4070 £95 » PCF176 76%

Broadband

Searching for a new high-bandwidth connection? Simply looking to upgrade? The best deals are right here

Choosing an ISP is like negotiating a minefield. Seriously, there are so many service providers and packages these days. It's important to look at several things – cost for the service being paramount, but also whether the service has a download cap or peak-time throttle. Neither are good if

you're spending all day MMOGing. It's also worth noting that Be, the internet provider, is starting a pay-as-you-go service. Be Lite offers 24MB connection speeds for under £15 a month with an initial usage allowance that can be topped up later if needed. Take a gander at www.bethere.co.uk

PCFormat FAVOURITES Who you gonna call?

Choose the ISP that best suits your net needs

» Light

The best broadband options for budget-conscious emailing and fast web browsing

Simply Broadband Max

SPEED 512Kb
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MIN CONTRACT One month
Simply www.simply.com

BT Broadband

SPEED 2Mb
MONTHLY COST £14.99
CAP 2GB
FIRST YEAR COST £206.82
MIN CONTRACT 12 months
BT www.bt.com/btBroadband

Virgin Net

SPEED 512Kb
MONTHLY COST £14.99
CAP 3GB
FIRST YEAR COST £179.88
MIN CONTRACT 1 month
Virgin www.virgin.net

Home LITE

SPEED 512Kb
MONTHLY COST £11.95
CAP 1GB
FIRST YEAR COST £190.40
MIN CONTRACT One month
NewNet www.newnet.co.uk

ntl 1MB Broadband

SPEED 1Mb
MONTHLY COST £17.99
CAP 3GB
FIRST YEAR COST £215.88
MIN CONTRACT 12 months
NTL www.ntl.com

» Medium

The perfect choice for those who surf for three hours a day and play games online

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PlusNew www.plus.net

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MIN CONTRACT 12 months
Supanet www.supanet.com

IC24 Broadband

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CAP 5GB
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IC24 www.ic24.net

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Toucan www.toucan.com

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ADSL 4less www.adsl4less.com

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Telewest www.telewest.co.uk

Broadband UK Online

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CAP Uncapped
FIRST YEAR COST £439.87
MIN CONTRACT 12 months
UK Online www.ukonline.net

Jargon Buster

Baffled by science? Let us explain the unexplainable...

ADSL

A type of broadband connection in which the download speeds are faster than the upload speeds, hence the acronym for Asymmetric Digital Subscriber Line. Currently, it's the only DSL available for most home users in the UK and it uses standard BT phone lines.

Bandwidth

The amount of data that can be transmitted and received by your connection at the same time. Bandwidth is usually measured in bits-per-second (bps).

Cable

A broadband type that connects via a fibre optic network (such as NTL). It lets you access premium TV through the same cable.

Contention Ratio

You share your bandwidth with other people; up to 49 users if you are on a cable modem. The higher your contention ratio (in this case 49:1), the choggier the connection.

Download cap

All broadband packages used to be unlimited. Now many providers restrict the amount of data you can download per month. Caps are expressed in GB and if you exceed them, you may have to pay extra.

LLU

Local loop unbundling. Many Telecoms companies and ISPs access the former incumbent's local network (ie BT) to provide services directly to the customer.

ADSL2+

A connection type that is quicker the closer you live to the network exchange. Expect speeds up to 24Mbps if you're lucky enough to live near the exchange, but do check local availability.

ADVICE!

Thinking of going wireless? Then make sure you invest in a setup (router and wireless card/USB receiver) that supports the 802.11g standard at the very least.



How to buy...

Games

Spring-cleaned that games cupboard of yours recently? Spruce it up with these beauties...



Call of Duty 2

The king of WWII shooters is duly crowned. COD2 is one of the most beautiful games around and what it lacks in diversity, it makes up for in intensity.



The Sims 2

Well over a year old and still showing no signs of letting up its grasp on the charts. The latest expansion packs like *Nightlife* and *University* keeps it all feeling fresh.



Battlefield 2 SF

This add-on pares down the sometimes unwieldy large scale battles, adding night maps and infantry-incapacitating lovelies like flashbangs and tear gas.

UK Games sales

LEISURE SOFTWARE CHARTS COMPILED BY CHART TRACK © ELSPA UK LTD - WWW.ELSPA.COM

POSITION	MOVED	GAME TITLE	PRICE	MONTHS IN CHART	ISSUE
1	↑	Call of Duty 2	£45	1	PCF 182 88%
2	↔	Football Manager 2006	£35	2	PCF 181 90%
3	↔	Age of Empires 3	£35	1	PCF 182 78%
4	↔	The Sims 2	£40	16	PCF 166 92%
5	↔	Civilisation IV	£35	1	PCF 181 92%
6	↔	The Sims 2: Nightlife	£20	3	PCF 180 80%
7	↔	The Movies	£45	1	PCF 182 89%
8	New Entry	Battlefield 2 Special Forces	£20	N/A	PCF 183 86%
9	↔	Quake IV	£45	2	PCF 181 88%
10	New Entry	Need For Speed Most Wanted	£30	N/A	PCF 183 70%

HAVE YOU PLAYED?

In today's fast-paced world some things are easy to miss...

Virtual Skipper 4 £35

While this is a niche product, we predict that a fair few land-lubbers will be drawn towards it. It looks gorgeous with the sun glinting off the waves, but the game itself is equally immersive. Easily the most relaxing sport sim around. PCF 183 82%



Peter Jackson's King Kong £35

The bearded one (Jackson, not the ape) oversaw the production, making this a beautiful conversion of his movie. Play alternates between the cuddly ape and the less hirsute Jack. The FPS parts are particularly tightly scripted. PCF 183 80%



Total Overdose £30

Although this looks like an attempt at GTA Mexico, Total Overdose is a world of OTT violence and humour. The best feature is the brilliant 'Loco Moves' that turn you into an invincible bull or a whirlwind of flying hot-lead death. PCF 180 85%



RE-RELEASES THIS MONTH

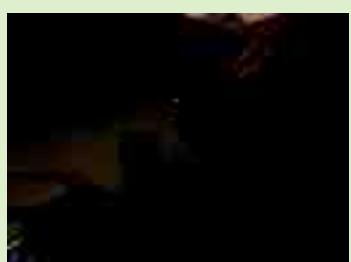
Old games given a well-deserved new lease of life



Hitman 2

Sold-Out > £4.99

Good morning Agent 47. Whether you like to sneak around quietly garrotting people or rampage with dual Berettas, this offers everything your dark heart desires, and all for a knock down price.



IGI2

Sold-Out > £4.99

As lone operative David Jones from the Institute for Geotactical Intelligence (the IGI from the title) you are charged with stamping out terrorism. Hours of stealthing and killing abounds.



Republic

Sold-Out > £4.99

Starting out as the leader of a faction in the republic of Novistrana you have to kill, bribe and slime your way to presidency. Whether you become a tyrant or a beloved leader is up to you.



Tomb Raider Angel of Darkness

Sold-Out > £4.99

The Tomb Raider series gets the RPG treatment, seeing you interacting with the different characters. One for the ladies too, with the new interactive character of Kurtis Trent.

The Mod Squad

Extras for your favourite games



Tyranid Mod

Game Warhammer 40K Dawn of War

Web tyranids.dowfiles.com

Conspicuous by their absence from the original release of *Dawn of War*, the Tyranids make up one of the most fearsome foes of the Warhammer 40K universe. They are huge, hideous aliens packing some serious biological weaponry, backed up by equally vicious hordes of Genestealers. This mod allows you to fight as and alongside these dangerous beasties and aims to keep the feel of the race as true to the table-top game as possible. You get to make nasty with the horrible Hormagaunts, stomp Space Marines with the gigantic Carnifex and devour Orks with the particularly unpleasant Lictor. Trust us, now's the time to find out what all that actually means.



GTA Rumble

Game Grand Theft Auto San Andreas

Web www.gtarumble.co.uk

Admit it, the instant you took your first faltering steps into the violent and deliciously entertaining world of *GTA San Andreas* you thought wouldn't it be fantastic if the entire world was populated with real people that you could virtually run over and shoot. *GTA Rumble* is a multiplayer patch for the game allowing you to roam around the landscape creating even more havoc. The sheer variety of vehicles available in the game lends itself perfectly to the manic nature of deathmatch. The final release of the 0.1 build is out with the latest patch screaming around the corner any time soon. Who could pass up the chance to create even more mayhem in San An?

HONORABLE MENTION



Battlefield 40K

Dawn of War translated the table top battle game brilliantly onto our beloved PCs, giving us the chance to be a commander of some of the most destructive souls in the 40th millennium. The only problem was that we weren't able to discover the joys of what it was really like to actually be a heavily armour clad Space Marine, down there in the mud. With this great mod for *Battlefield 1942* you get that very experience.

Game *Battlefield 1942*

Web www.battlefield40k.com



Beta Eater

What better for the game hungry than the latest Korean cuisine?

This month we've gone for a slightly international flavour and had a look at the latest tests from Korea. The first is a fantastic *Battlefield 2* clone called **War Rock**. It's currently free to download and play from www.warrock.net and already



has loads of games going. It even has female characters.

The other is the rather erroneously titled **Space Cowboy** at www.spacecowboy.net. You do spend most of the game battling it out planetside in the



MMOs up for grabs so there's still time to get in on the **RF Online**, **Auto Assault** and **Chronicles of Spellborn** betas. Just email betaeater@futurenet.co.uk with the name of the game in the subject header.



PCF'S SELECTION Games

Form is temporary, but class is permanent – the games we're *still* hooked on

>> General



MUST-PLAY

Civilisation IV £30 >> PCF 181 92%

The game that stole many waking hours from our collective youths is back for its fourth incarnation and it's better than ever. For the first time we are treated to our civs in glorious 3D, but all the old playability is still there in abundance.

2K Games >> www.2kgames.com/civ4



UNSONG HERO

Space Rangers 2 Dominators £30 >> PCF 179 51%

We're big enough to admit when we've been a bit harsh, and our verdict for this game was a little bruising. Continued play opens up many options, whether it's how to spend your time doing porridge or how to command your army in battle.

Excalibur >> www.excalibur-publishing.com/space.htm

>> First-Person Shooters



MUST-PLAY

Quake IV £45 >> PCF 181 88%

A well crafted singleplayer campaign makes *Quake IV* a definite must play, but it's the brilliant multiplayer games that really bring this title to life. It will have you squealing in delight as you drill railgun sized holes in your friends and neighbours.

Activision >> www.quake4game.com



UNSONG HERO

SWAT 4 £30 >> PCF 175 88%

A bit of contradiction in the FPS stakes, as you don't actually have to kill everybody. Two rounds in the back of the head may be satisfying, but watching felons clawing at their eyes as the pepper spray eats into their pupils is just as entertaining.

Vivendi Universal >> www.swat4.com

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Restart

THE GAMES WE'VE LOVED

Total Annihilation

REDISCOVER There's life in the old Cavedog yet

Spearheading the two-and-a-half-D age, *Total Annihilation* proved that an old, well-made game is better than an average new idea.

Refinement is the key in Cavedog's bot-tastic strategy. A careful balance of all the elements produced an RTS that taxed your management skills as much as your tactical acumen. You had to fight for your raw materials in TA with a ferocity not seen in other RTS games. Mineral deposits were spread out across the entire map, often in very limited pockets, and the refineries you used to mine them were full-on

installations – there was none of the simple harvesting beloved of the C&C crowd. Defending your outposts presented a strategic challenge of a very different order.

But once again it's the multiplayer side that had us cooing with nostalgia in the office. Fired up for a four-way tussle, our 2006-grade PCs enabling resolutions the game never expected to see (K-Bots crawling like ants seen from space), we battled away one evening long after everyone else had gone home. It's not as pretty as we remember it being, but it's still just as much fun.



Total Annihilation's resource management and battles won it a legion of fans.

FALSE PROPHETS

"OF COURSE, BY THE TIME DIGITAL TV HITS THE STREET, THE INTERNET WILL HAVE BEEN OFFERING HIGH-SPEED VIDEO SERVICES FOR A COUPLE OF YEARS." RICHARD WENT BACK IN PCF 70, JUNE 1997, FEELING A LITTLE OVERCONFIDENT ABOUT ON-DEMAND TV.

Castlevanian families

Long before Ms Rayne was strutting her PVC and leather-clad stuff all over your screen, *Castlevania* was bigging-up the vampire massive. This side-scrolling beat and magic-'em-up gained a fanatical following and the franchise has enjoyed outings on pretty much every platform from GameBoy to PS2 and now, thanks to this tidy remake, the PC.



Get more info about *Castlevania* at flashoffree.fr/castle/site/htm/news.htm

Chips with that?

REINVENT Overclocking made your CPU all toasty? Well, you know what's good with toast...

You've got to love the wilful madness of the human condition. The completely insane Trubador (www.phys.ncku.edu.tw/%7Ehtsu/humor/fry_egg.html) figured that he may as well put all the wasted heat energy from his 1.5GHz Athlon XP to good use, by frying an egg.

Trubador removed the heatsink from his CPU, placed a small stack of 2p coins directly on the die then folded a piece of tinfoil into a tray and placed that on top of the lot. Propping this up with struts placed in the heatsink screw-holes on the motherboard, he had to wait a mere 11 minutes for his protein-rich treat to bubble into and edible form.

You may be thinking, 'what a pointless waste of potentially hardware-destroying time', but consider this: how many times have you had to leave a marathon gaming session just to sate you weak and feeble body's relentless need for sustenance? Well now thanks to Trubador's pioneering work you need never leave the desk again! He's working on bacon next! Think of that, bacon and eggs, fried while you play! This is the kind of innovation that could change the world, and we salute him for it.



"IT WAS THE OFFICIAL GAME OF BRITPOP. OTHER THAN CHAOS, ROBOTRON, TAPPER AND REBELSTAR, AND 3D DEATHCHASE, OF COURSE."

Stuart Campbell, Designer, *Cannon Fodder 2*



REMEMBER...

In 1994, a generation of PC gamers were about to be plunged into the depths of Hell itself. *PCF* was on the front lines...

February is not traditionally a great month for games. These days, developers are so intent on getting their titles out on the market in time for the Christmas rush, the following months become a barren tundra, bereft of new releases. But in February 1994, *Doom* arrived, and it would turn out to be arguably the most influential PC game of all time.

From the first moment *PCF* was plunged into *Doom*'s dark corridors, we knew that a new era had arrived. Sure, *Wolfenstein 3D* had been impressive, but it was nothing compared to the speed and detail of the images that *Doom* churned out. Ray-casting technology allowed for fast 3D textures and terrifying sprites, all on a humble 386.

Of course, *Doom* spawned a thousand clones, some of them great games in their own right. It was also the birth of the deathmatch, now almost a requirement in any first-person shooter. *Doom*'s influence can't be underestimated, and it cemented the PC as a gaming platform that could provide thrills that consoles could only dream of.

ALSO OUT THEN...



ALONE IN THE DARK 2
The genesis of the survival horror school, which counts *Resident Evil* and *Silent Hill* as two of its alumni, *Alone in the Dark* and this, its sequel, placed you in the shoes (and tweed) of Edward Carnby and saw you battling polygonal foes in a haunted house.

SCORE
PCF 82%



THE TERMINATOR RAMPAGE
An FPS released at the same time as *Doom*? Whoops. It wasn't likely to stand up against id's mighty behemoth. Luckily Bethesda redeemed itself later with the seminal *Terminator: Future Shock* and is now working on the vast *Proph Oblivion*.

SCORE
PCF 78%



Premier Manager 2
Before *Champ Man* found its feet (the original got 10% in *PCF13*), *Premier Manager* was the only place for linesman-berating thrills. This sequel brought out pre-season friendlies and a mullet-sporting club secretary who could tell you what the weather was like.

SCORE
PCF 78%

FEBRUARY
1994

GAME
DOOM

SCORE
PCF 29, 92%

Looking Back

THE CREATOR'S CRITIQUE



Fact File

Battle planner

Subject Stuart Campbell
Job title Designer
Developer
 Sensible Software
Reviewed PCF32, 86%



Levels set in space, eh? That'll irk the purists...



The desert levels were a grounded setting more familiar to veterans of the first game.

Cannon Fodder 2

Kieron Gillen scrambles for cover in the pixelated undergrowth, and cuts through the propaganda surrounding Sensible's second tour of duty

Talk about a game having everything you could ever want. A pixel-perfect blend of action and strategy with a small squad of men versus intricately designed levels. The greatest game theme tune of all time in the form of the lazy skank of *War's Never Been So Much Fun*. A splash of controversy over its use of the military poppy, with an inevitable national outcry from the tabloids over its perceived insult to Our Boys – ironic, when you consider the fact that

Cannon Fodder was one of the most anti-military wargames of all time. How do you follow all that?

Well, that was the task which faced Stuart Campbell. Star reviewer for *Amiga Power*, he stepped behind the curtain to design the sequel. "I'd loved *Cannon Fodder* for its originality, sense of humour and intuitive, accessible controls," Stuart recalls, "but by the time I got to Sensible I was frustrated by the sudden brick wall of difficulty it hit you with on Mission 8, and liked it a lot less. I wanted a game that was very much like *Cannon Fodder*, but better."

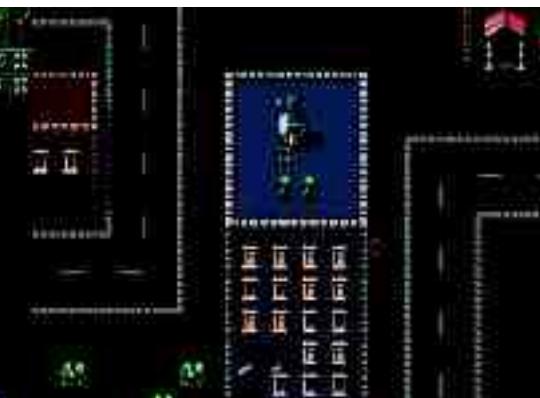
The time-travel concept had already been decided before Stuart arrived at Sensible's headquarters. That left him to concentrate on removing what were the worst excesses of the first game. "As far as I was concerned, my job was to amplify the good stuff about the first game, and prune out the dull bits", he recalls. "The first things to go were those levels where you spent 10 minutes trudging across a massive landscape and wading slowly across enormous rivers, only to get instantly twatted by a rocket-launcher and have to start again". The rivers are a good example of something snipped away. "I absolutely hated ending up in the water in the first game – it was slow, annoying, unfair and

unrealistic," Stuart argues, "If you're crossing a river and someone starts shooting at you, you wouldn't just stand there getting wet and dead, would you? It made no sense that you didn't just lift your rifle to your shoulder and fire, and since there was nothing I could do to let the troopers fire from the water, the obvious solution was to not have them go into any water in the first place. I wanted the sequel to be all meat: all action and no padding. I also wanted it to start off hard and get steadily harder, not have half a dozen levels of tutorial, then suddenly fling you off a cliff."

FALL BACK BY SQUADS

Compared to most developers PCF talks to in this column, Stuart's almost unique. He didn't climb the development poll, but move straight from writing about games to making them. Was there much culture clash? "The pace took some getting used to – compared to working on a magazine, development goes at a crawl," he recalls, "Otherwise, it's pretty similar. In both cases you're a group of young men doing a fun creative job in a fairly small and close-knit team, and then going to the pub quite a lot. You do get a much broader perspective from working on mags, though, because you see so many games – as a developer you're naturally quite narrowly focused. You have to make a conscious effort to stay aware of the outside world, which is probably why *Cannon Fodder 2* is so full of cross-cultural references, from music, movies, comics and the like." He doesn't lie. *Cannon Fodder* has more references to The Jesus and Mary Chain than any game other than EA's ill-fated *Need for Speed: Psychocandy* edition.

Cannon Fodder 2 was what we'd probably call a semi-sequel now – the standalone add-on pack. As much content as the original game, with all new graphics but with no major changes to the actual structure. Working from tried and tested technology did have its own distinct advantages.



1930s Chicago is a break from modern slaughter.



Why would anyone have a problem with such a lovely place?

"Well, obviously it cuts out most of the problems with bugs and stuff, which is handy when you've got a programmer who can't be bothered to come to work half the time," Stuart notes, "but mostly it was limiting, because I didn't want to just churn out another 72 levels of ripped-off elements of the first game, but because it was using the existing engine I couldn't introduce any new gameplay elements. The big challenge was trying to use the ones that were already there in new and inventive ways, to keep the game fresh."

It's this creativity in the face of technological limitations that Stuart's most pleased with. "I'm proud of how sneaky some of the levels are," he claims, "I designed lots of them to have an obvious but extremely hard solution, and another one that required a lot more ingenuity, but would reward you by being much easier to actually complete. I was really chuffed when people found the 'proper' routes through levels. What pleased me especially, though, were the levels where people worked out solutions that I hadn't even thought of. I love games where you can outsmart the designer and get away with it because there's nothing to stop you from completing a level the 'wrong' way. It's like a little challenge between you and the player – a designer should always work on the principle that game designers are trying to make players go a certain way, but if they can spot a weakness in the design and exploit it, well done."

Conversely, there's little which he dwells upon too negatively. "There are a few levels that are just too hard, because it's such an easy pitfall to stumble into when you're making your first game

– you test it so much that you get supernaturally good, and you keep making it harder because you think everyone else will breeze through it in a day," he muses, "But there's nothing in there as hateful as *Cannon Fodder's* Mission 8." There's also the small matter of the slightly random progression through the game. "I wish Virgin hadn't cheaped out on including the storyline I wrote in the manual, because without it the game makes no narrative sense at all," he claims. "But hey – if you want narrative, buy a book."

Over 10 years on from *Cannon Fodder 2*, and the industry has changed completely. From his experience constructing the game, what would he say to the creators today? "I can't even begin to imagine what goes on in the minds of modern developers, so I wouldn't presume to

offer them advice," Stuart exclaims, "PC gaming left me standing by the side of the road, watching in helpless despair, years ago. *Cannon Fodder 2* pretty much happened on the cusp of a hideous paradigm shift in game development, in which all the previous values – accessibility, fun, a sense of humour, that sort of thing – were ditched for endless sub-Tolkien fantasy stuff, nerds-only controls, online play in place of proper challenge, and bogus 'realism'. The last 10 years of PC gaming have been like watching a slasher flick when the stupid teens decide to split up to search the spooky house, and the cutest girl heads for the door to the cellar. Come to think of it, that's the lesson I wish most devs would learn: 'Hey, we should go and look for the deranged axe-wielding murderer in the basement!'" **PCF**

Another world, another planet

It wasn't all plain sailing for Sensible's soldier-'em-up

Upon release, many criticised the Alien world levels. Stuart remains unrepentant. "It's weird – I actually think the Medieval levels, for example, are visually much weaker. But people get strangely excited about alien worlds for some reason – I remember all the flak Perfect

Dark on the N64 took for having them, and Half-Life too. Not that I ever saw Half-Life's, of course – life's too short. As a designer and as a gamer, I don't much care about graphics – it's the gameplay that occupies my attention. Graphics are only really there to

show you where everything is. They're like a good football referee – if they're doing their job properly, you shouldn't even notice that they're good or bad. If people are too busy looking at the graphics, to appreciate the gameplay, your game's probably boring."

Developer Diary

Seriously, Owain Bennallack, editor of Develop magazine has a good idea this month...



Just for a minute, I'd like you to imagine that you're a wannabe mogul looking for a business. You wouldn't plump for supermarket, PC maker or mobile phone operator, would you? When did someone last cry out for another Tesco? The market is saturated.

Games and mods are in a similar state. So many mods seem to have budded from one single-celled *Battlequake 1935 Tournament Strike 2* mother clone – and full games are little better. We might want more innovation, but we don't need more games. If you want any kind of game, it's out there.

If I was starting a games business, I wouldn't start as a pure games developer. I might try middleware perhaps, or art outsourcing. But the area I think is ripest for newcomers is what the Americans are calling Serious Games.

Kicked off in 2004 by the Serious Games Initiative (www.seriousgames.org) at a summit at the GDC in San Jose, the Serious Games banner flies over a diverse band of individuals, entrepreneurs and companies. They aim to apply what devs have learned about interaction and virtual worlds in other areas, from education and surgery to management.

They've realised that the commercial software industry has spent millions of pounds creating duff 3D engines and barren virtual environments, while the games industry has knocked out innumerable compelling titles at a fraction of the cost. So, why not get the *Unreal Engine*, say, and devs to put together a training sim or modelling tool that people want to spend time with? Traditional developers are moving in (*Blitz Games* recently founded *TruSim*, a Serious Games division), but apart from links with the military, the Serious Games 'movement' is still largely a talking shop.

There's an opportunity here for people who create software that does some game-like things, but isn't 'entertainment.' The same free engines and tools could get a start-up going. And in the end, Serious people might actually pay you. It's pretty easy to imagine a world where much of our shopping and internet searching happens virtually.

Don't think so? Try finding a new spin on deathmatch then – leaving more opportunity in Serious Games for those who do.

Owain is the Editor of Develop magazine.



WIN!

A shiny pair of Sparkle GeForce 7800GT cards could be yours!

We give you both barrels with two SLI-ready cards, courtesy of CyberPower Systems.

Taking advantage of the PCI Express architecture, NVIDIA is wholeheartedly subscribing to the idea that two processing heads are better than one. Pair up a couple of its SLI-ready cards and watch them fly, and as dual cards go you can't get that much faster than a couple of NVIDIA's GeForce 7800GTs at full steam.

When the concept was first introduced, we bet you sat there cursing those decadent rich folk who could simply slap in another top of the range card, never thinking that you could be one of the lucky ones. CyberPower is aiming to bring this sort of performance within reach of all of us, though, with the opening of its new European wing. For many years it has been one of the leading system manufacturers over in the US offering top of the range products and technical support at a great price.

Take a look at www.cyberpowersystem.co.uk and drool over its ultimate gaming machines. We had a play around on its PC builder and managed to create a dual core SLI setup with twin 7800GTs for just over £1,000. The firm custom builds each system and runs it for 72 hours to be sure of its stability, and if that isn't enough to inspire faith, you also get a three year warranty as standard.

Jealousy is a negative emotion, though, so that's why PCF has teamed up with CyberPower UK to bring the heady dream of SLI to life for one incredibly

fortunate reader. CyberPower has donated twin GeForce 7800GT cards from Sparkle, worth around £500 for the pair. These beauties deliver fantastic performance on their own, but put them together and you've got an all-powerful, shader-chewing, polygon-swallowing machine. Think of the behemoth Richard Pryor built in *Superman III* and you're coming close...

All you have to do is click on the competition link over at www.pcformat.co.uk, answer this simple question and wait for your name to be picked completely at random by our sophisticated, yet tellingly hat-shaped, name-picking system.

COMPETITION RULES 1. Employees of Future Publishing, Cyberlink or Sparkle and their immediate families or agents are not eligible to enter. 2. The prize will be awarded to one randomly-chosen correct answer received by the closing date. 3. The Editor's decision is final and no correspondence will be entered into. 4. Entries must be received by 1st March 2006, which is the closing date. 5. Multiple entries will be discarded. 6. There are no alternatives. 7. The prize is provided by CyberPower, who reserves the right to provide a prize of equal or greater value. 8. No purchase is required. 9. This competition is open to UK residents only.

HOW TO ENTER

Answer this easiest of SLI related posers to enter!

What does the acronym SLI stand for?

A)Scalable Link Interface

B)Shader Level Interlink

C)Super Llama Injection

Visit www.pcformat.co.uk for a chance to win!



The pair of 7800GTs will make light work of just about anything you care to throw at them.

Next month in PCFormat

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**Plus! Stubbs the Zombie, Battle for Middle Earth 2,
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ON SALE 23-02-2006

Over to you...

HAVE YOUR SAY

Reach out and touch someone

More and more of the world can now be chatted to, flirted with or have their mothers insulted, all from the safety of a monitor's soft glow. We asked you to tell us just how much online love you're spreading this Valentine's Day...

A very healthy **3/4** of this month's survey said they use an instant messaging client. Unsurprisingly, **54%** of those use the ever-popular MSN flavour, with Yahoo and Trillian trailing in joint second with **12%** shares each.

Surprisingly, **1/3** of people using IM had managed to get out there and meet all of their contacts in real life. **12** of you had never met any of your messaging buddies, however, which is understandable in some more extreme circles...

It's still good to talk though, and that's nothing to do with Bob Hoskins or BT, as **30%** of you are using VoIP services to chat. A further **1 in 5** people went on to say that they use their net phone more than their landline.

Most of you have a fairly manageable contact list, with **35%** only having **1-10** addresses. **8** People, however, managed to fill their rather large black books with **100-200** names. One of them had only met **3** of these people though.

Romance is alive and well on the net, with over 3 in 10 respondents saying they've flirted with strangers via an instant messenger client, and 40% of those that met up with people online did so through IM.

"I accidentally added her to my list of favourites and she sent a mail asking who the hell I was. Two years later and we will be spending Christmas together." **Ahhh.**

Love at first back light, but online affairs aren't as common as you'd think.

of the **7%** of folks that had the guts to meet up with someone they met on an online dating site, very few were willing to share their experience with us. This could well have been a blessing: one wag claims "You wouldn't print it if I told you."

Gaming arenas proved less popular with ol' Cupid as **86%** of you proved fighters not lovers. Dating sites held slightly more appeal for our respondents, though not much, with only just over **1 in 10** ever joining up to a matchmaking service. Opinion's still split **50/50** on whether such sites are either useful or just plain desperate.

For every Richard Curtis Actually story there's a corresponding tale of woe, from the "girl had 'issues'" to "He was the size of Mount St Helens. I mean, this guy was one of the fattest humans I'd ever seen in my life. Hey, and guess what? He didn't look a bit like the photo he sent me!"

WIN!

Sign up to our newsletter at www.pcformat.co.uk and you'll receive our Over to You survey every month. Bung us your answers for a chance to win a top-of-the-range Shuttle XPC SN25P barebones system. It supports Athlon 64, HyperTransport, and PCI Express.



Stats are not based on anything like as scientific as a random sample.

NEXT MONTH
PCFormat issue 185 is on sale 23rd February